4-19-2013

HAIL: Human Auto Integrated Lifestyle

Theodore John Risch Jr.

HAIL: Human Auto Integrated Lifestyle

by

Theodore John Risch Jr.

A Thesis

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Master of Architecture

Major: Architecture

The University of Memphis

May 2013

HAIL: *Human Auto Integrated Lifestyle*

ACKNOWLEDGMENTS

I owe sincere thankfulness to everyone who has offered support during this research and design process. I would like to express gratitude to my thesis chair, Professor Jenna Thompson, for understanding and sharing passion for the issues involved. I would also like to thank Professor Michael Chisamore for keeping the big picture in mind during all design conversation. I owe gratitude to professor Jeanne Myers for helping to keep the project on track and impromptu visits to the studio to spread enthusiasm.

A special thank you is due to my late grandfather who taught me the value of hard work and determination and who also put me in the right place to discover the correct thesis site.

I would like to give much recognition to my caring wife Jana who has supported me through the most difficult parts of this journey, and to our son who we will be meeting for the first time very soon.

ABSTRACT

Risch, Theodore J. MArch. The University of Memphis. May 2013. HAIL: *Human Auto Integrated Lifestyle.* Major Professor: Jennifer Thompson.

Thesis Statement:

"Can architecture influence the relationship between the automobile and our urban landscape to enrich human experience?"

The purpose of this thesis is to address the issues that are faced in the built environment in regards to the way that cities are shaped by dependence on the automobile. When a city is developed with the primary concern of automobile accessibility; human accessibility and experience become neglected. Using statistical data on public transportation ridership and auto dependency trends, the design will find a solution to the lack of human experience in urban landscapes that have been designed for the automobile. Therefore, the design solution puts forth the human experience, and strategically plans for changes in automobile density and usage trends. The design will also address future use of the building as automobile usage changes and different uses are required.

“When Noah sailed the ocean blue

He had problems just like you

For forty days he sailed his ark

Before he found a place to park.”

-Anonymous

TABLE OF CONTENTS

LIST OF FIGURES

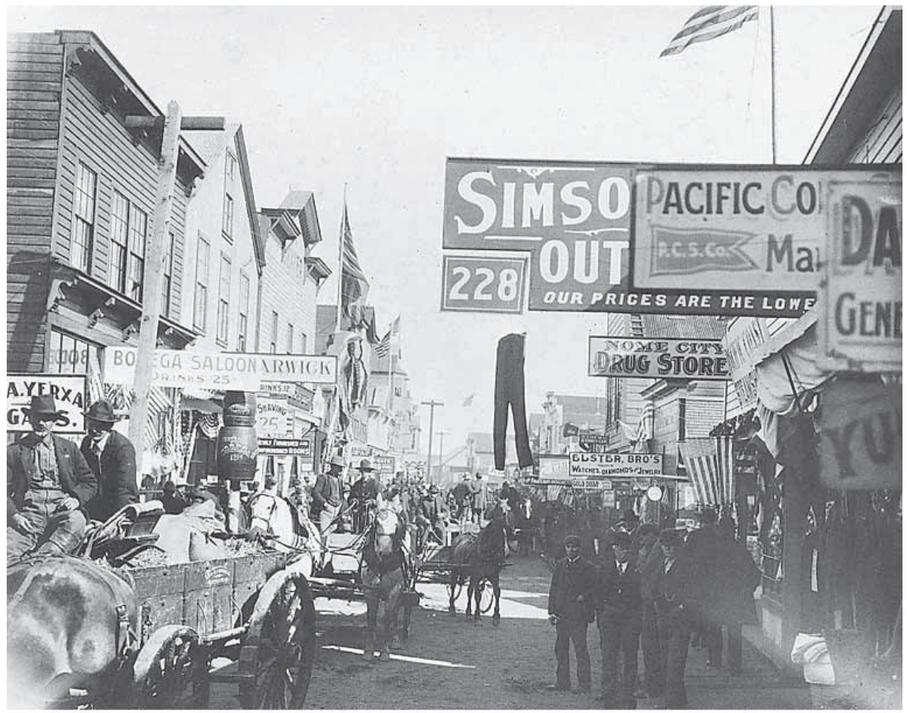
INTRODUCTION

As a possible thesis project, much time was given to consider what would inspire creativity and passion in order to create something meaningful. A project was needed that would make a connection to a personal experience that could be “felt” rather than simply compile research and apply design solutions to common architectural problems. While considering many different topics, thought was consistently drawn to a personal experience in a former residence located at Court Square in historical downtown Memphis, Tennessee. It was there where daily commuting via the car to work, school, and retail places were unavoidable, as those amenities were not readily available in walking distance. While the experience of living in this area of downtown Memphis is positive due to the beauty and character of the neighborhood, the process of commuting to and from was a hassle. The most uninspiring part of the whole commuting process is the experience of the parking garage (Figure 1). Since the neighborhood is in a moderately dense part of downtown Memphis, parking is mostly structured with the exception of metered street parking.

Figure 1: Carchitecture
(http://www.autoevolution.com/news-image/parking-guide-for-dummies-9456-7.html)

The parking “building” was introduced in the 1950s when automobiles were rapidly crowding the downtown fabric. One example of the parking “building” was an attendant that greeted the visitor at the entrance and took the car up a small and steep helical ramp and parked the cars two to a stall according to which ones remained for the longest period of time. The building therefore was not designed for human habitation or experience, becoming essentially a warehouse for cars.

As trends in parking changed, the parking garage was opened to the public with no modifications to enhance human experience, resulting in a space occupied by people who were not thought about during the design process. A typical garage was dark and gloomy creating a dehumanizing experience, due to an unsafe feeling in these conditions resulting in the human psyche becoming negatively impacted. It was in this experience that an architectural disconnect existed. As this experience became the first and last step in a journey, it bookended the trip as a wholly negative experience. This negative experience may be due to the fact that our human perception is heavily influenced by first and last impressions, therefore creating a need to recover an urban landscape once dominated by automobiles and create an architectural journey that incorporates elements to produce a positive experience.



Property of Special Collections, University of Washington Libraries

Figure 2: Horse Crowded City Street
(http://content.lib.washington.edu/cdm4/item_viewer.php?CISOROOT=/alaskawcanada&CISOPTR=849

HISTORY

During the late 1800s American cities faced a growing crisis. The cities became overcrowded as European immigration peaked (Figure 2). Urban environments and air quality became overrun by the burning of coal and wood leaving unhealthy living conditions. The primary source of transportation at this time was the horse. The muddy horse footprints created in the wet streets and smell of manure left by the quantity of horses traveling through cities made conditions unbearable. American society was just as dependent then on horses as we are today on automobiles. The wagons, coaches and carriages became increasingly popular as the horse was used to carry more and more people only adding to the overcrowding conditions that people faced while experiencing the city. Mud, axle grease, and horse droppings flooded the city streets at a rate that became unreasonable to manage and clean (McDonald, 2007). The American addiction to convenient personal transportation had begun.

It comes to no surprise that when "The Great Epizootic of 1872", a lethal horse disease, began to kill horses at an alarming rate, inventors turned to mechanical horses as a replacement. This invention came out of necessity, and solved many of the problems associated with the poor environmental conditions left behind by horse usage (McDonald, 2007).

As the cost of ownership of the automobile became less than that of a horse, the stable became overtaken by the machine. In Memphis, for example, the E.K. Keck & Bros. Livery Stable was built in 1868 and later converted into parking in 1920. Most stables, with the exception of large ones which were conducive for becoming adapted to the new machine, were too small for the ramps needed to produce a multistory car park. The majority of former stables during this era had been constructed of wood and became extremely susceptible to fire with the introduction of gasoline and other flammable materials related to the automobile (McDonald, 2007).

The relationship between the home and work began to change with the advent of the automobile. As distances are traveled with greater speed and efficiency, one could live farther from the core of the city without extensive commuting times. People elected to move away from the rapidly expanding and industrializing city.

From this shift out of the city core emerged a distinction between the chaotic city of factories, shops, and offices and the idealized clean and pure domestic life outside of the city. This ideological shift changed land use regulations that segregated people by land use zoning laws from industrial life resulting in the phenomena of urban sprawl (Nelson, 2009). The byproduct of urban sprawl is what the design community is faced with today. Sprawl has been influenced solely on the idea of getting the automobile in and out of the city to support the suburban lifestyle that has been desired by many families for decades. This lifestyle is cultural, in that, the automobile motivated people and made this life convenient (Nelson, 2009).

Since the majority of people continued to work in the city, but became separated physically and socially by sprawl, the reliance on the automobile became greater and increased the need for storage of these machines in the city (Figure 3). The negative results of sprawl come in the form of high commute times and community disconnections as well as oil dependency and its resulting climate change (Dennis, 2009).

The building type “parking garage” came into existence as simply a storage space, or warehouse for a machine. What was overlooked was the experience of transitioning from commuting to the other activities

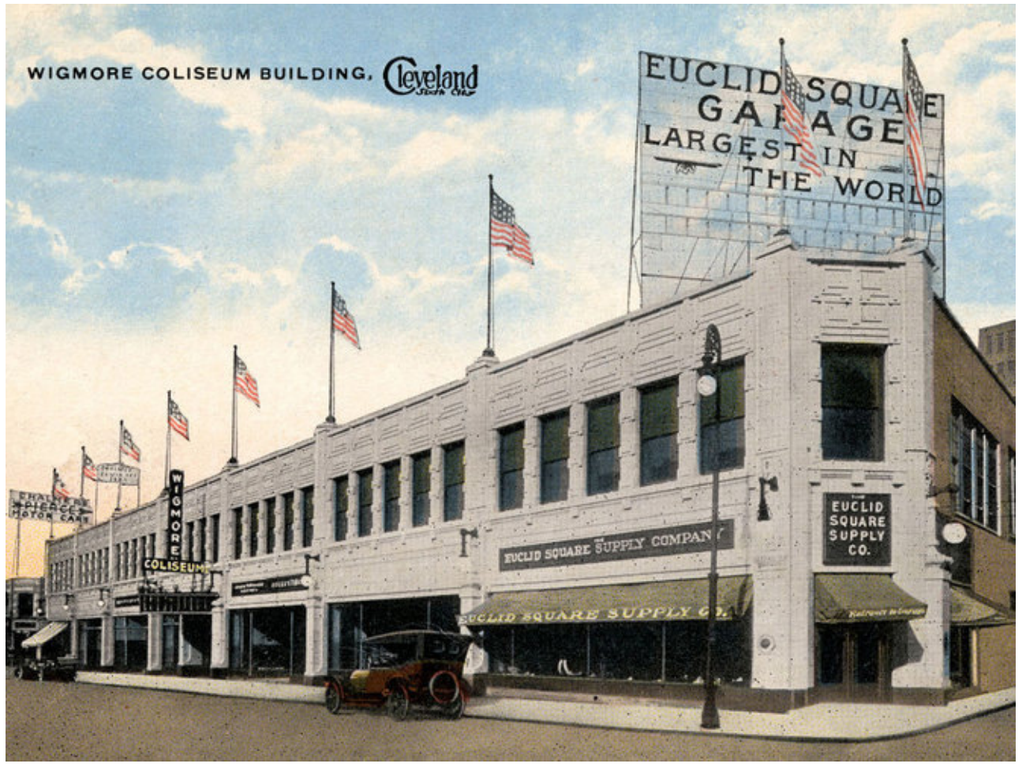


Figure 3: Early Garage Design
(http://www.npr.org/templates/story/story.php?storyId=120545290)

that will be taking place upon arrival such as shopping, working and gathering. Transition is important to the design of the parking facility and must inspire human interaction in a way that engages the senses and elevates the experience of transitioning from car to another activity from negative to positive. It is critical to not only improve this connection, but also promote other means of movement and connections through multiple modes of transportation. Early parking garage design seemingly neglected the human experience, but we must keep in mind the evolutionary nature of the building type.

This type of phenomena is a byproduct of our cultural and industrial society and mindset. A written example of this philosophy describes the difference between “Cradle-to-Grave” vs. the “Cradle-to-Cradle” (McDonough & Braungart, 2002). The idea reflects our cultural urge to consider our buildings and products as

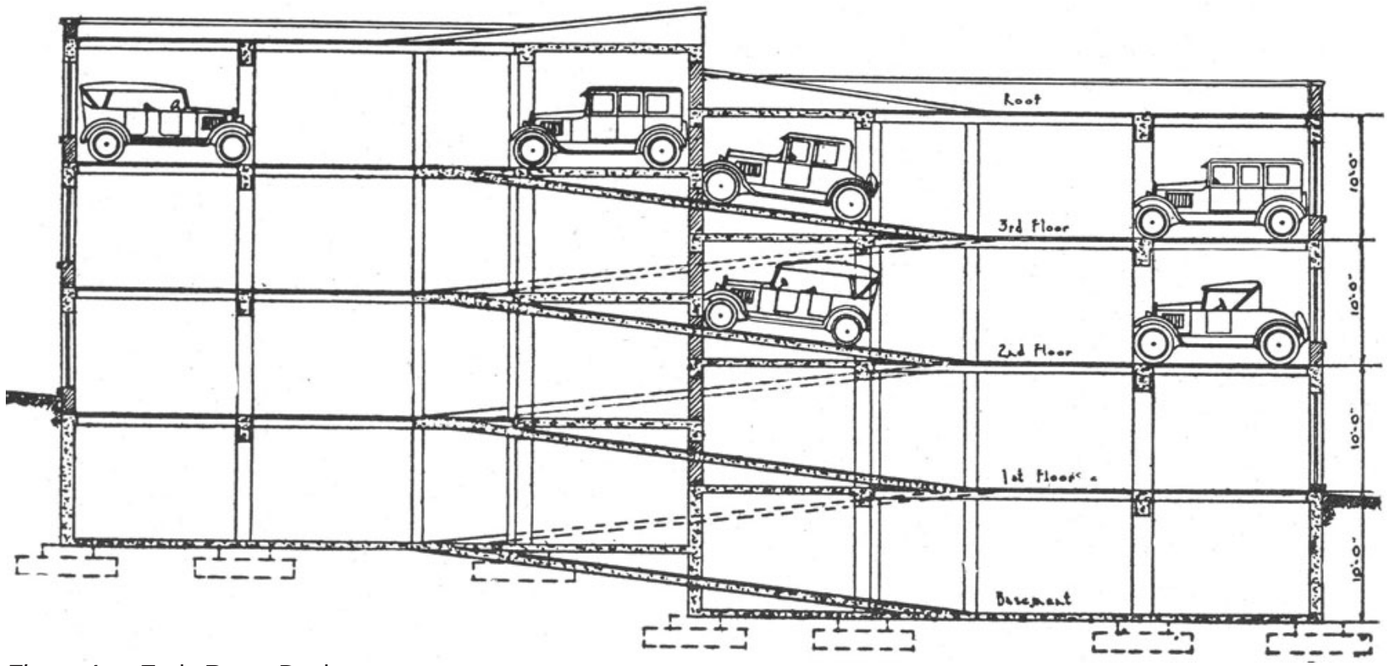


Figure 4: Early Ramp Design
(http://www.npr.org/templates/story/story.php?storyId=120545290)

a single use life cycle. The "Cradle-to-Grave" concept reflects the status quo of the industrialized society that would presumably view a building as useless after a certain period of time. Alternatively, the "Cradle-to-Cradle" concept promotes buildings and products to be composed of materials and designed in a way to have multiple life cycles and eventually returns to the earth without destroying the environment. This type of thinking emphasizes the community over the individual, leaving behind an industrial process that benefits us all (McDonough & Braungart, 2002).

As the building parking structure evolved from a storage container to a place occupied by humans, the emphasis remained on building a structure of economy and the automobile. This was apparent specifically in early garage design due to the fact that the automobile owner did not enter, but rather gave the car to an attendant to drive up and park. Self-service parking did not start until the midcentury in the United States due to the necessity for parking outgrowing the supply of attendant based garages.

Bicycle shops were also seen as a way to house this new technology, as early automobiles were viewed as a bicycle that incorporated an engine for power. As the desired capacity of space in the bicycle shop grew greater, a new building type emerged dedicated solely to the use of the automobile. With the number of drivers growing and becoming emotionally attached to their personal freedom and control over it, self-parking became popular in the late 1920s.

With this new freedom provided by the automobile came new experiences. The parking garage increased in complexity, as the building type must now be designed to meet the needs of the human and the machine simultaneously. Parking garage designers initially viewed their client as the automobile and gave little consideration to the driver. The building, generally speaking, was designed for the economy of the car rather than human habitation (Figure 4). The human experience and sense of journey, while moving from the automobile through and eventually out of the building, is a feeling of oppression because elements which make the space comfortable are not present. Introductions of light, scale, and human interaction are some basic principles that would improve these spaces (Henley, 2007).

The parking garage design became a central debate, as garage users chose the ramp over the elevator. The elevator in parking garages meant more efficiency in the stall layout. People chose the ramp as a way to be more in control of their environment, as well as the familiarity of the ramp as it mimicked nature's sloping hills (McDonald, 2007).

As an affordable means of transportation for the emerging middle class, the automobile became a symbolic and literal representation of physical and economic mobility. This connection between two different types of mobility became a leading design principle of parking garages, informing designers that elevators would not suffice (McDonald, 2007).

By the 1950s there were three primary means of getting the automobile in and out of the parking structure: The full attendant, customer/attendant, and self-park. There were seven different variations of ramp designs: straight ramps, two-way ramps, ramps with sloping floor plates, curved ramps, elliptical ramps, and concentric spiral ramps. Today, these ramp designs are prevalent and used depending on the building types upon which they are connected to as well as the desired contextual response (McDonald, 2007). See Figure 5. The ramp gave the users a connection between the

Figure 5: Helical Ramp
(http://www.universalstudioshollywood.com/production/galeria_TA_v1.1/?galleries=48&foto=583)

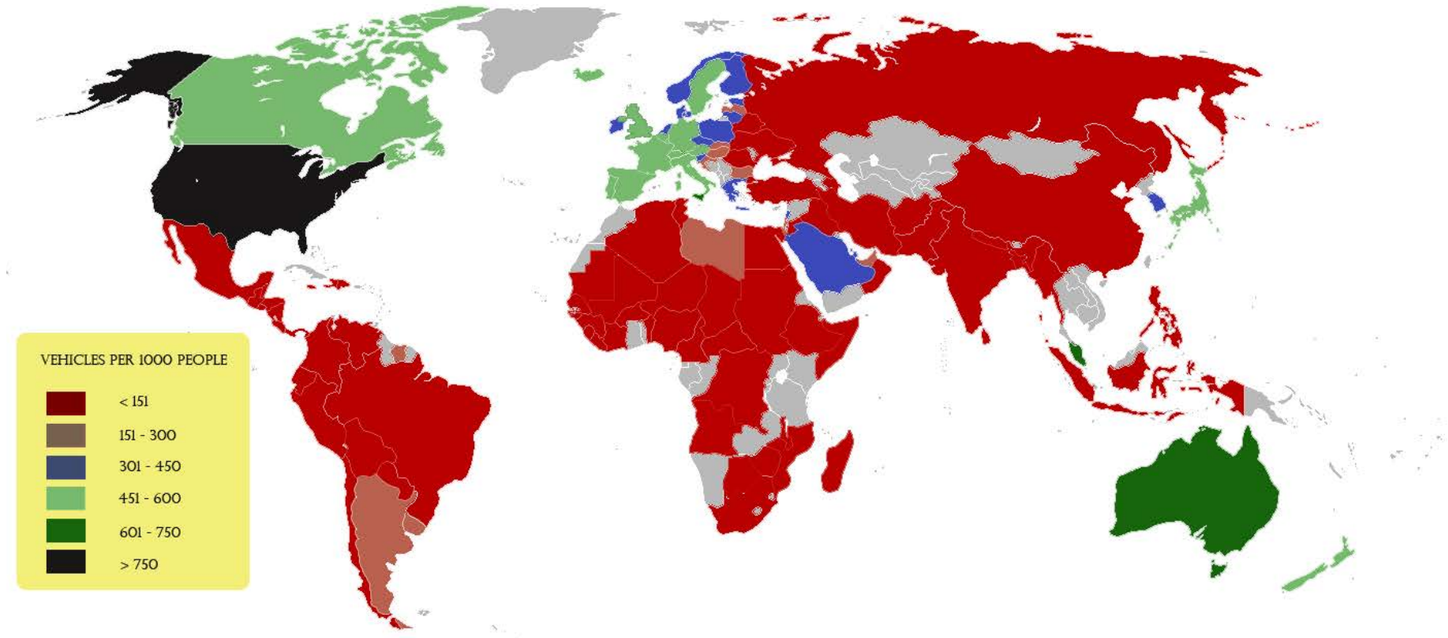


Figure 6: Automobile Dependence
(http://gicl.cs.drexel.edu/wiki/Engine_Global_Issues)

automobile, the driver, and the landscape and created mental reassurance that the driver would be in complete control over the car, even when it was parked inside of a building (McDonald, 2007). The automobile became what the horse used to be and met many emotional needs such as the feeling of economic and physical freedom. It represented everything that its predecessor did but was not a living creature. Subsequently, designers of parking garages used the mindset of designing for a machine, rather than a living being. The problem of negative human experience continues to exist in the city and is a consistent challenge to the design community. The current state of cities devotes an overwhelming percentage of its space and resources to the circulation and storage of automobiles.

FUTURE TRENDS IN AUTOMOBILE USAGE

The worldwide number of automobiles increased from 50 million in 1950 to 350 million in 1980 and to roughly 500 million in 2001 (Bell, 2001). It has been estimated that worldwide, people spend almost $500 billion annually on costs associated to car usage (Bell, 2001). In Memphis the total linear distance of paved roads alone equals 4,153 miles (Walker, 2011). This is equivalent to driving from New York to Los Angeles and back.

Another cost is the resulting environmental sacrifice due to vehicle emissions that must result in a future decline in automobile usage and an increasing dependence on public transportation. The United States has the highest per capita vehicle ownership status in the world, currently estimated to be at greater than 750 vehicles per 1,000 people (Figure 6). Car-centric landscapes that make up our cities have become a backdrop for architecture and the pedestrian experience. Our landscape has been accepted for many years as an accommodation for the car first and the human experience last. The resulting architecture that has become common in our urban fabric is driven by forces created by the car, not people or architects.

In her book, *Asphalt Nation*, Jane Holtz Kay (1997) describes our current conditions:

> Planning for such sixty-mile-an-hour speeds, designing for wastelands of parking, for corridors of concrete, the architect's work has inevitably become 'carchitecture'. Denying the three-mile-an-hour pace of the walker, the world seen from the porch, the surroundings in all their tender detail at an easy pace, the once close-scaled places have spread into a blur with all the individuality and identity of the freeway (p.78).

Land Area Devoted to Roads in the U.S. (Delucchi, 1998, Table 6-A.1)

	A	B	C	D	E	F	G	H	I	J
	Avg. Lanes	Lane width	Shoulder & dividers	Total width road	Paved roads	Private paved rd. factor	Paved road area	Extent of unpaved roads	Private unpaved rd. factor	Total road area
Units		*Feet*	*Feet*	*Feet*	*Miles*		*Miles²*	*Miles*		*Miles²*
Urban										
Interstate freeway	5.4	12.0	40	105	11,603	1.00	231	0	1.00	231
Other freeway	4.5	12.0	30	84	7,714	1.00	123	0	1.00	123
Principal Arterial	3.4	11.5	15	54	52,349	1.00	532	0	1.00	532
Minor Arterial	2.5	11.3	10	39	74,516	1.00	546	463	1.00	550
Collector	2.1	11.1	8	32	76,251	1.01	463	846	1.02	468
Local road	1.8	10.9	8	28	491,926	1.03	2,650	34,196	1.04	2,837
Subtotal urban					*714,359*		*4,545*	*35,505*		*4,739*
Rural										
Interstate freeway	4.1	12.0	35	84	33,677	1.00	533	0	1.00	533
Other Highway	2.5	11.7	30	60	85,729	1.00	971	0	1.00	971
Principal Arterial	2.1	11.5	15	39	142,866	1.00	1,058	0	1.00	1,058
Major collector	2.0	10.9	10	32	388,611	1.00	2,355	48126	1.00	2,647
Minor collector	2.0	10.1	5	25	196,006	1.01	941	97,494	1.05	1,428
Local road	1.7	10.0	4	21	720,229	1.05	3,008	1,426,697	1.10	9,250
Subtotal rural					*1,567,118*		*8,867*	*1,572,317*		*15,888*
Total					***2,281,477***		*13,412*	*1,607,822*		*20,627*

The table shows one estimate of the total amount of U.S. land devoted to roads.

Road Supply As a Percentage of Urbanized Area (Vasconcellos, 2001)

City	Portion of Land Used for Roads
Developing Countries	
Kolkata (India)	6.4%
Shanghai, China	7.4%
Bankok, Thailand	11.4%
Seoul, South Korea	20.0%
Delhi, India	21.0%
Sao Paulo, Brazil	21.0%
Developed Countries	
New York, USA	22.0%
London, UK	23.0%
Tokyo, Japan	24.0%
Paris, France	25.0%

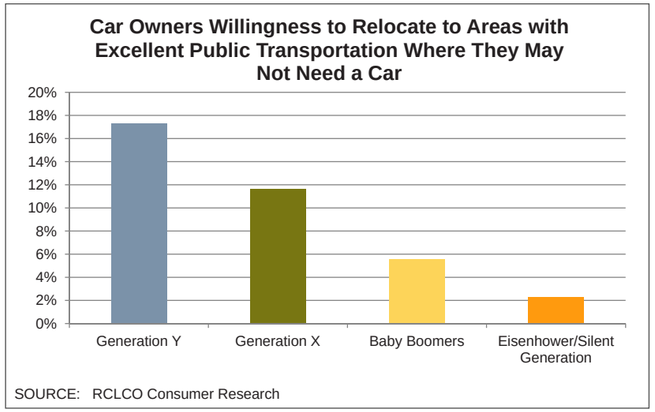
The table shows one estimate of the amount of urban land devoted to roads in various countries.

TeleCommUnity (2002) estimated that U.S. roadway rights of way total 625,517,587,200 square feet or 22,437 square miles.

Table 1: Land Use Chart
(Litman, 2012)

About 38.4 million acres of impermeable surfaces cover the earth and degrade our environment (Kay, 1997). The future depends on an evolving idea and cultural understanding of the role of the automobile in our daily lives.

As seen in Table 1, the idea of an American identity so closely tied to dependency on the automobile is one that is changing as generations become less romanticized by the automobile (Litman & Victoria Transport Policy Institute, 2012). The struggle for the architect is to find a way to deal with the automobile in our urban landscape in a way that will capitalize on emerging trends in usage. These trends include a higher likelihood for younger generations to use public transportation and move back into the city center. Generation X, those born in the generation after the post WWII baby boom and the following Generation Y, are reported to be 8% more likely to give up the automobile they currently own to relocate to a transportation oriented community as seen in Figure 7 (Gardner, 2012). According to the American Public Transportation Administration, in 2007 10.3 billion trips were taken using public transportation, the highest number in over 50 years (Moore, 2008). This statistic can be attributed mostly to rising fuel costs in addition to younger generations less reliant on the automobile. The mentality of getting from the car to the building once was prevalent as motorists



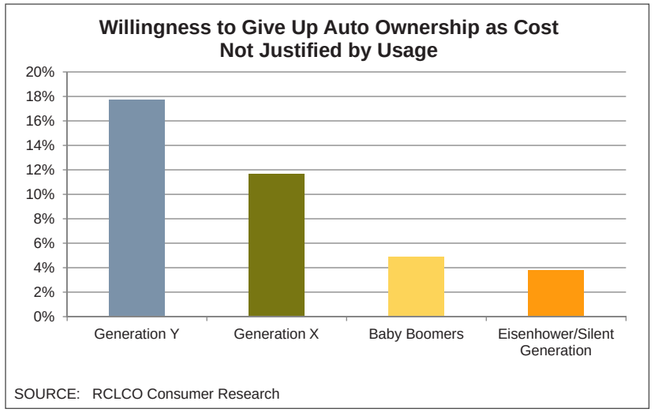


Figure 7: Auto Ownership Trends
(Gardner, 2012)

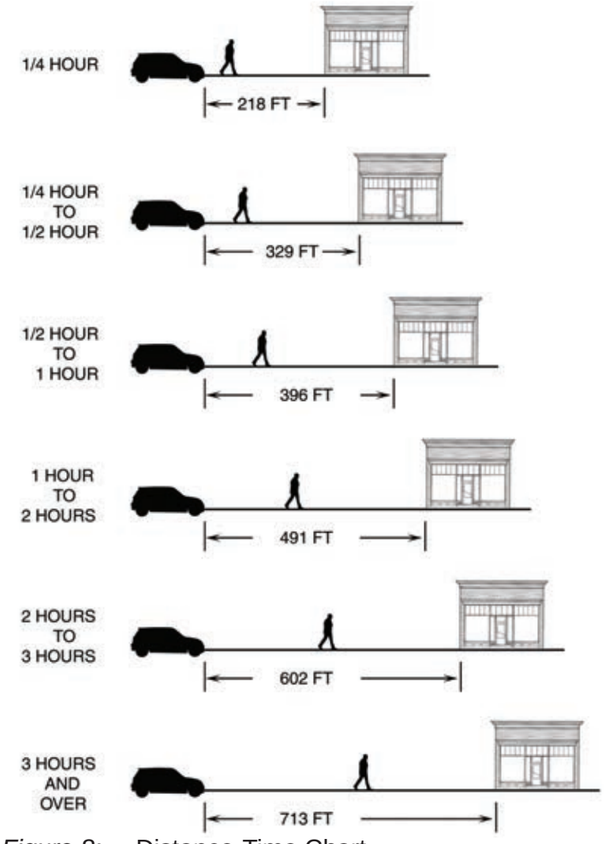


Figure 8: Distance-Time Chart
(Author)

viewed the transitional experience as a painful side effect of getting from point A to point B. This could be attributed to the dehumanizing experience of moving through space designed for the automobile and not the human experience (Figure 8).

The distance-time chart describes the average distance that a person is comfortable walking, given the frame of time that is to be spent inside of a given establishment. As the realities of automobile usage are changing the habits of the citizens of communities overrun by auto-infrastructure, our landscape is left with communities shifting trends towards more auto independent lifestyles. The time is now for the commuting transition to become an experience that is flexible for an evolving building type.

ADAPTABILITY

The parking garage design continues to be an evolving building type. The role of the architect in this process is to engage this evolutionary process and guide the building type to become positive experience for the users. Because our built environment changes based upon the newest trend or fad, cultures must prepare in advance for its response.

It is common, in suburban America in particular, to construct buildings based upon a limited forty or fifty year life span. This life cycle timespan is usually placed on a building by the banking industry as a time value monitoring system for financial purposes. In the past, society viewed buildings as long-lasting memorials of cultural values and principles. These buildings were built to withstand the test of time in order to transcend these values through many generations. A building that can be used as an example of this is the Pantheon, located in Rome Italy, which has served its original purpose for over 1850 years. As our society has shifted to a multicultural temporal value system, so has our way of design and building. With increasing diversity in culture and a fewer concentrated efforts in fringe cities, our landscape has lost focus on monumental buildings and focal points and become somewhat dispersed with smaller, less dense places to gather and form community. Often times our buildings are seen as lasting only long enough for a few lease cycles so that a developer or businessman can sell and move to the newest "up and coming" part of town. This flight can be seen literally in the suburban landscape of sprawling Memphis, TN. As businesses outside of the city center of Memphis proper became less prosperous due to people moving to the newest district further east, the once vibrant sense of place becomes lost.

What is left behind during this process is a barren wasteland of structures that are devalued monetarily as well as lacking cultural identity and significance. What needs to happen to address these issues? Is there a way to plan for the inevitable, rather than ignoring the issue until the building is seen as a lifeless byproduct of our consumer driven society? The answer may be in the form of planning for the temporal ventures to take place without the need for vestigial structures dotting our landscape. Buildings may once again be monuments because they are adaptable to ever-changing cultural and economic forces.

In the case for the proposed design of the parking structure, future trends in the need for this building will be considered. As the short term need for the number of parking spaces is perceived as a constant, the future needs will change as automobile usage transforms. One case study is the hospital design of the Erlanger Medical Center garage in Chattanooga, TN built in 1981. The building structure uses a flat floor parking deck with an easily removable speed ramp to accommodate future expansion of the adjoining hospital (McDonald, 2007). Funding for hospital garages competes directly with funding for other necessities such as modernized equipment that are of importance to operating a hospital, therefore becomes somewhat of an economical afterthought (McDonald, 2007). One way to address both site constraints and uncertainty about the direction of future parking demand is to build in flexibility. Here the idea of using a flat-floor deck parking deck and easily removable external speed ramp allowed the hospital for easy renovation and expansion of facility operations. Floor to floor heights are anywhere from 10 to 16 feet, depending on the adjacent tower's floor, to eliminate the need for an awkward connection (McDonald, 2007).

Contemporary hospital garages often incorporate other uses and special designs. John P. McGovern Texas Medical Center Commons, in Houston, TX was built in 2003 and designed by Walter P. Moore (Figure 9). It is a multi-functioning facility offering a restaurant and other supporting services for the hospital. One prominent feature of this particular garage is the waterfall at the entry, which redefines the entry and exit experience by offering a visually calming element rarely associated with parking structures. Water introduced into the building produces a humanizing experience that helps offset the elements of the building that relate directly to the

Figure 9: John P. McGovern Texas Medical Center Garage
(http://offcite.org/2012/09/05/the-buildings-of-the-texas-medical-center-through-the-years)

function of the automobile. The numerous amenities of the commons include a food court, conference rooms, a lounge, retail space and a roof terrace create a welcome refuge from the hospital environment (McDonald, 2007). Royal Jubilee Hospital in Saanich, British Columbia incorporates a grove of mature heritage Garry Oaks, which were presumed to be a design challenge due to the size and complex root structure, as a transitional zone between the hospital and garage. The resulting garage serves as a visual backdrop to a therapeutic walled garden that is shielded from noise. The garden has proven to be a successful element in the hospital's care plan for its patients by carefully separating human and automobile interaction with natural features (McDonald, 2007).

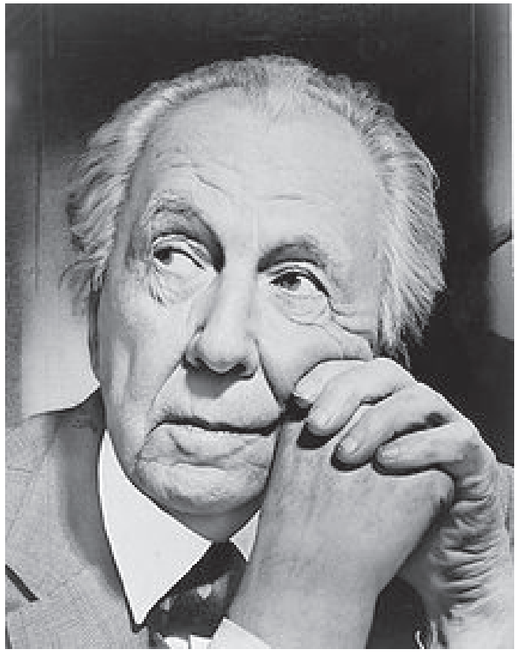


Figure 10: Frank Lloyd Wright
(http://en.wikipedia.org/wiki/Frank_Lloyd_Wright)

Frank Lloyd Wright, Figure 10, had an ideology regarding the human automobile relationship that used the car as a means of removing people from the hustling city life out into the quiet landscape. His ideal automobile centered utopia Broadacre City placed people out in a rural homestead setting where there would be balance in one's life of manual labor and intellectual learning (Reinberger, 1984).

Wright was commissioned to design a "structure on the summit of Surgarloaf Mountain," in Maryland in 1924 (Figure 11). The building was to "serve as an objective for short motor trips" (McDonald, 2007). In the proposed design for this structure, Wright created a continuous spiral ramps that vehicles ascended and descended. Wright's vision for this project completely merged the parking ramp with other uses for the building, an apparent attempt to integrate parking with other elements (Figure 12).

Although the project never was built, Wright's thinking permeated the design community. The continuous ramp suggested a flow through the building complete with human experience as people move through that space. That initial idea later became realized in the design for the iconic Guggenheim Museum in New York City in 1959 (McDonald, 2007). As visitors move through the museum, a continuous journey is experienced with opportunities for other types of interaction along the way.

The design for HAIL will respond to this idea of journey by incorporating other programmatic elements along the continuous path of the parking structure. The attempt will merge users with elements to create positive human experience.

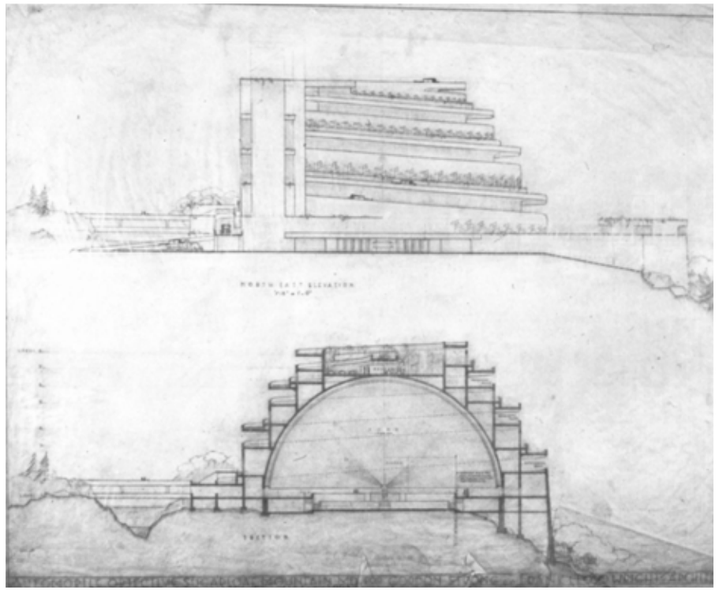


Figure 11: Sugarloaf Mountain
(Reinberger, 1984)

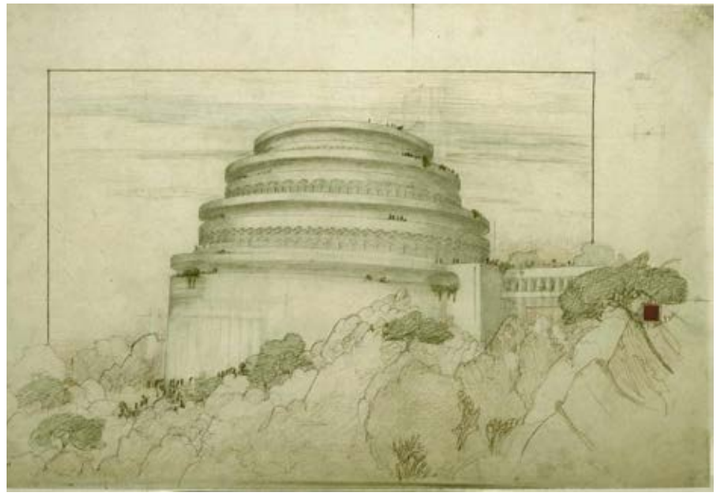


Figure 12 Sugarloaf Mountain
(Reinberger, 1984)

As automobiles were taking over cities during the 1960's, architect Louis Kahn, Figure 13, designed an alternative to integrating automobiles into the urban fabric and merging a building with road. The parking "towers" are situated on the periphery of downtown Philadelphia, Pennsylvania and relieve the city core from automobiles. Kahn felt as though the city should defend itself from the automobile by segregation, as it did not promote human interaction. Although there was a clear segregation between auto and human, Kahn decided to make the cylindrical parking towers able to provide needs other than just parking (Figures 14-15). His proposal offered a modest concrete frame that is adaptable to become either office floor or parking. On the roof, the building offers open space for employees of the building. (Bell, 2001)

Major ideas that can be taken away from the proposed design by Kahn is the question of whether or not to allow the automobile into the core of the city. It is evident that Kahn struggled with the notion of segregating the storage of the automobile into the fringe of the downtown core, but he then accommodates human experience into a structure that could have been thought about in terms of purely a function of the car. The design thinking of Kahn is expressed in the design of HAIL by integrating parking with the human experience.

Figure 13: Louis Kahn
(http://blog.lib.umn.edu/khoth002/architecture/2006/12/)

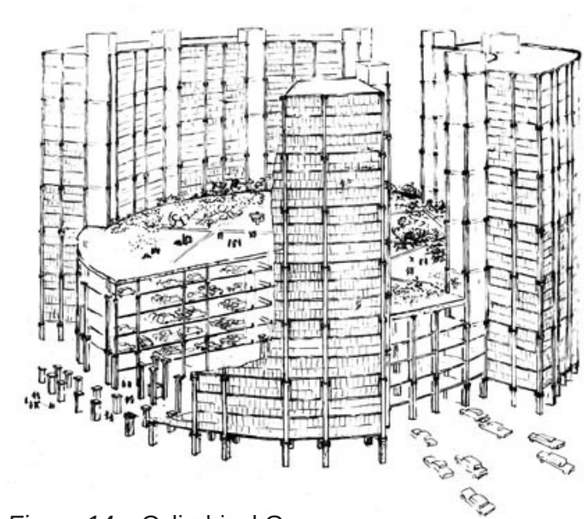


Figure 14: Cylindrical Garage
(http://places.designobserver.com/feature/architect-park-thyself/12637/)

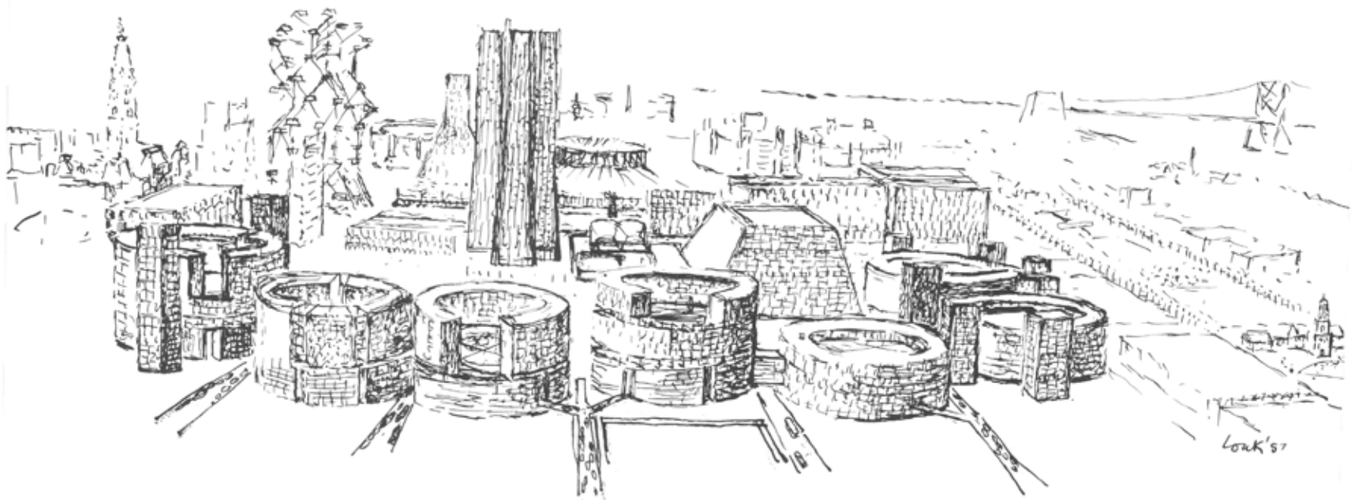


Figure 15: Civic Center: Philadelphia, PA
(Hand Sketch,1957)

THE PLACE FOR THE AUTOMOBILE

A question that faces many city planners and developers is how will the automobile exist in future planning? Should we permit the automobile into the city core? Does the automobile need to be removed from our urban core altogether to create a more inviting atmosphere for pedestrians?

Architect Louis Kahn proposed to place the automobile just outside of the core in 'harbors'. From there, people would use public transportation to move into the core. Architect Frank Lloyd Wright proposed an automobile society atop Sugarloaf Mountain in Pennsylvania. Here, he embraced an ideal place where people left the city for a day and enjoyed a mixed use building where cars and people coexisted. Must the city turn its back on the car? How would a city be serviced if not by trucks that depend on the streets?

As Jane Jacobs claimed in her 1961 book *The Death and Life of Great American Cities*, an increase in automobile usage calls for action to separate the car and pedestrian so that a balance can be maintained between automotive congestion and human life. A realistic approach to handling the car in the city may meet the two extremes in the middle. Accommodation for the car in the short term development plan of the city must be in place. Thus, an evaluation of the future trends in parking ais needed.

As cultural trends change towards automotive independence, this shift in usage will be a slow one. The great lengths that will be involved with the cultural shock of removing what is and has been for a substantial period of time a critical part of our culture and daily life will be drastic. American culture tends to be less accepting to big changes, and this would need to happen over time (Dennis, 2009). A reasonable solution comes in the form of adapting our structures to this changing trend in the culture of commuting through cities. In the design example, a parking facility will be designed in anticipation of this change, and strategically adapt to future uses with minimal construction cost and waste to the building owner. This solution will directly relate to the principles put forth by William McDonough (2002) in the "Cradle-to-Cradle" concept of production. Thinking of future uses for our buildings will also help our cultural identity by leaving structural forms present to serve other purposes in the future, rather than being built with one specific use in mind and for a short period of time.

The act of commuting can sometimes be private and self-focused due to the period of interstitial moments that take place when engaging physically from one place to the next. An example of this may be viewed while driving, cycling, walking or riding a bus from home to a destination such as work. The act of commuting becomes a time to decompress and reflect on what activity just took place and what activity is next. Commuting implies and anticipates that other activities are to proceed. The transition experience between these two types of activities is what becomes overlooked. Critical to this experience is the connection between the automobile and the city. This experience should engage the sense of arrival and prepare the spectator for what lies ahead upon their journey.

One of two philosophies is to keep parking on the fringes of the city. The other strategy is to integrate the parking into the urban fabric to keep the area active. Architect Louis Kahn deemed the influx of a growing number of automobiles into the city as a threat, and decided to keep them outside the core of the city in his plan for Center City Philadelphia. Edmund Bacon, during the 1960's, developed a plan for Philadelphia as executive director of the Philadelphia Planning Commission. This plan was modeled on the philosophy of integrating the garages into the core of the city.

Our urban landscape is designed for cars. The infrastructure is in place to accommodate vehicles for peak usage times. The length of time when the infrastructure is uninhabited leaves an inhumane atmosphere by exposing a vast built structure that is uninhabited and not of human scale. This perceived vibrancy, when the street is lined with parked cars and traffic is congested at intersections and streets, tends to fluctuate according to commuting routines related to the surrounding buildings. Off peak times of the day or season, when the parked cars are removed and the congestion slows, the human experience becomes altered drastically as the scale of the street becomes overwhelming. In this case, the human experience is improved by the presence of the automobile by telling the spectator that human interaction is not far away. Not only has the physical scale of the environment been altered, the perceived human proximity has been removed as well, leaving the landscape void of safety.

Human proximity is an unspecified distance upon which people feel a sense of others close by, therefore relating that place to a safe and enjoyable experience. The design study in this thesis uses a vast parking lot that, depending on the time of day, fluctuates in human proximity. The issue of uninhabited space will be addressed by the correct placement of density to offset the perceived vibrancy. The empty parking lot, for example, leaves the urban landscape barren and a greater perception of danger takes place when the lot is not in use (Figures 16-17). Automotive infrastructure must carefully be designed so that as the need for parking changes, the perceived vibrancy is minimally affected.

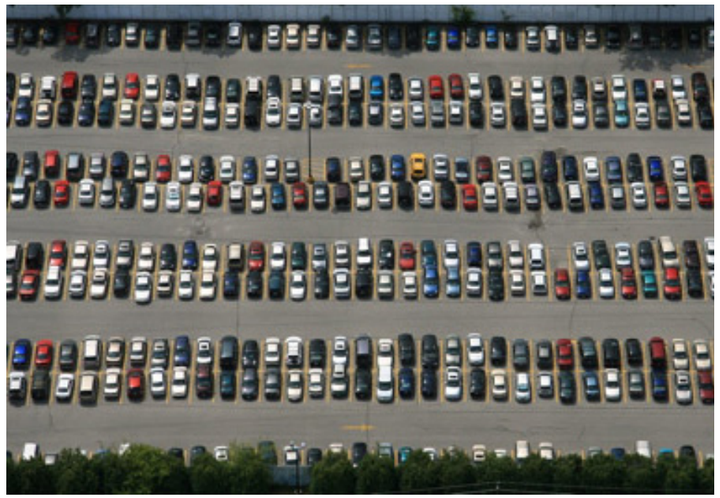


Figure 16: Busy Parking Lot
(http://meccinteriors.wordpress.com/2010/12/09/can-parking-lots-heat-water/)

Figure 17: Empty Parking Lot
(http://www.imagefreedom.com/blog/passion-in-seo-and-the-entreleader)

DESIGN CASE STUDY

Park Tower

LTL Architects

The first design oriented case study chosen for this thesis is a hypothetical project designed by LTL architects in 2004 for the Venice Biennale (Figure 18). Some major elements that helped to inspire the design project in this thesis focus on the relationship between the user of the parking facility and shopping center and the circulation and placement of the automobile. The tower blends the line between the typical suburban shopping center, office park, residential complex, and parking facility and carefully arranges them into an urban high-rise structure. The programmatic elements are seamlessly integrated with parking all the while maintaining connections to other elements. The building introduces a park like setting for the residents and visitors that enhances the sense of community.

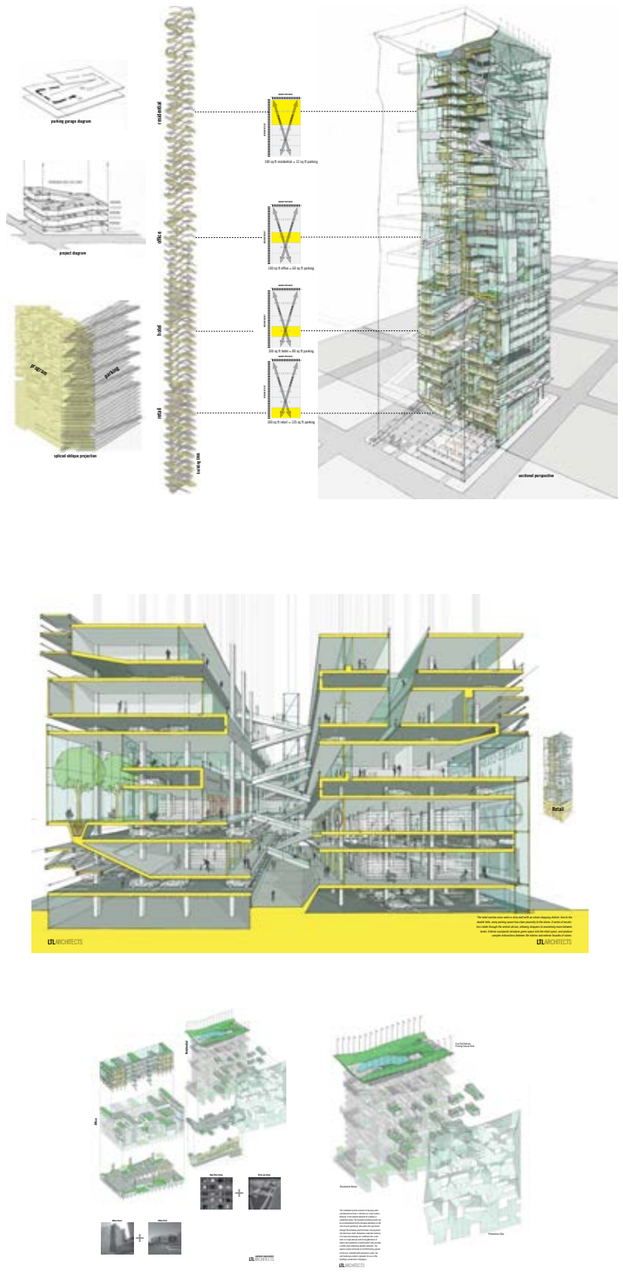


Figure 18: Park Tower
(http://www.ltlarchitects.com/)





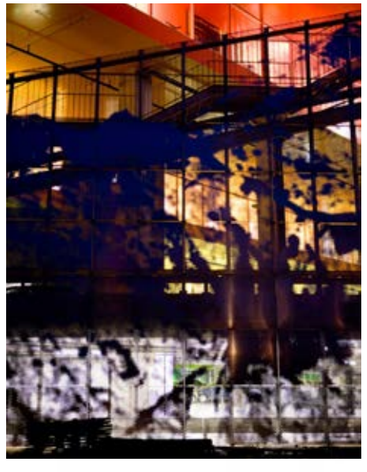
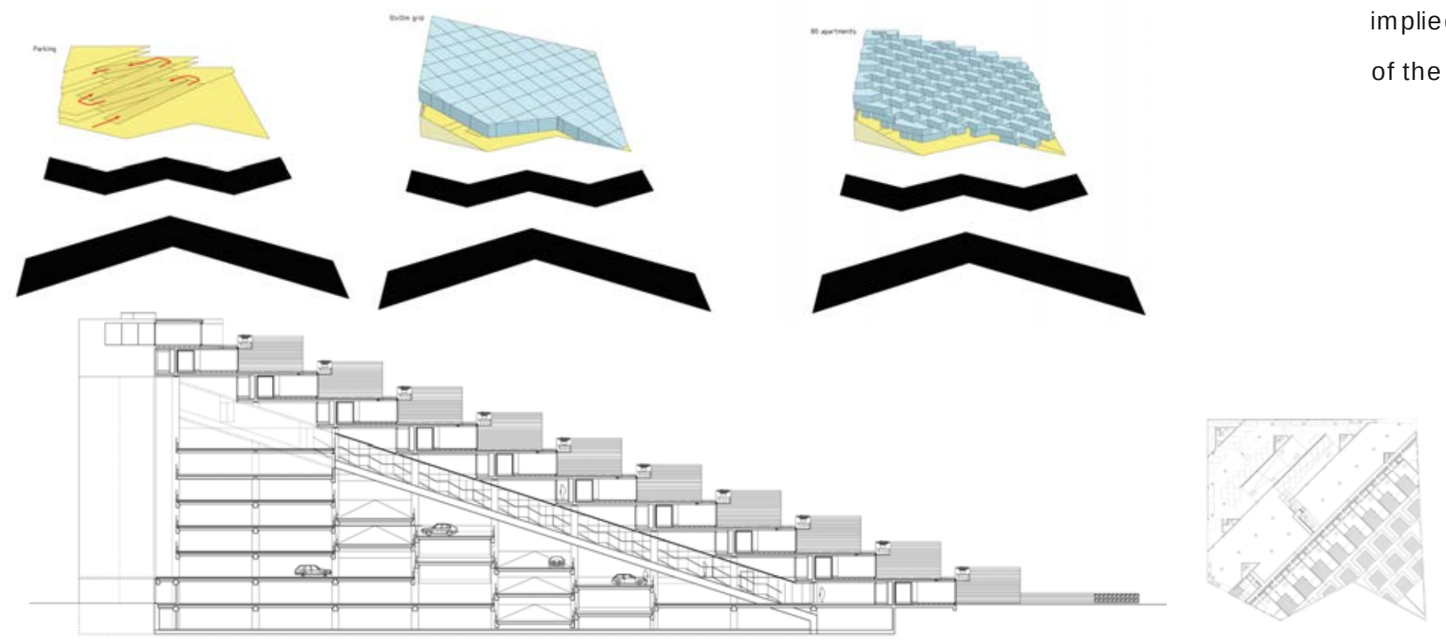



Figure 19: Mountain Dwellings
(http://www.archdaily.com/15022/mountain-dwellings-big/)

Mountain Dwellings

BIG Architects

Mountain Dwellings, designed in 2008 in Copenhagen Denmark is a parking facility with housing units placed above (Figure, 19). The design project for this thesis will incorporate the idea of creating a vibrant landscape on an otherwise geographically mundane site. The site for the Mountain Dwelling project is extremely flat. To gain a landscape feature, the architect designed the parking garage as a sloping mountain and seamlessly integrated the modular housing units in a way to take advantage of the views. The building's unique form and implied landscape serves the community and any visitor of the site with an iconic and memorable experience.

Figure 20: Translucent Membrane Collector
(http://www.archdaily.com/30880/rosa-parks-transit-center-ftl-design-engineering-studio/)

Translucent membrane collectors, as used in the Rosa Parks Transit Center in Detroit, Michigan, utilize a polypropylene material that allows some sun to penetrate while covering visitors from harsh weather (Figure 20). The membrane collects and harvests the rainwater to be used for irrigating the on site plants.

Figure 21: Standing Seam Corten
(http://www.archdaily.com/233095/memphis-veterinary-specialists-archima-nia/)

Standing seam corten steel is a material that represents life as the panels are expected to naturally weather and change over time (Figure 21). This material is placed on half of the transient housing units to enhance the human experience by giving the site an ever-changing environmental characteristic. This is effect is similar to the naturally changing landscape that this project seeks to represent holistically. The corten will undergo a natural weathering process caused by climatic influences and bring its intrinsic character to the site.

Figure 22 Wood Pressed Concrete
(http://remodelista.com/posts/architectural-element-wood-pressed-concrete-walls)

An economical structural system concrete is important to the proposed design (Figure 22). Rather than finishing the concrete smooth, in certain places of critical human interaction, the wood formwork will be expressed to represent the natural environment through the wood grain texture.

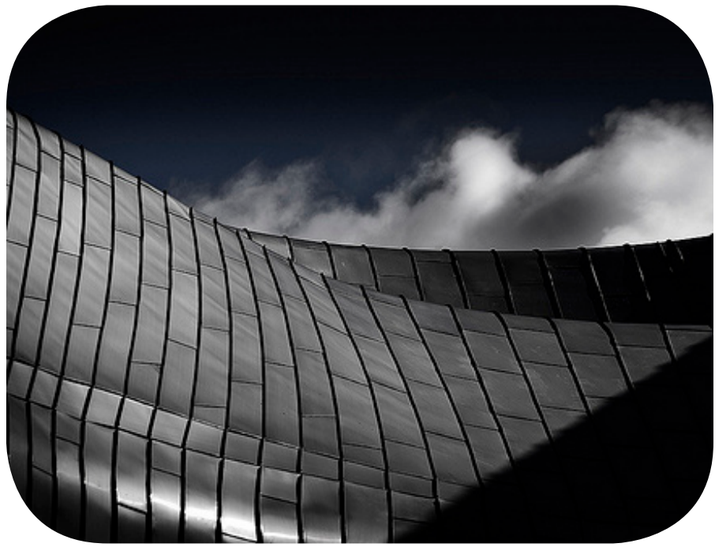


Figure 23: Zinc Cladding
(http://www.zaha-hadid.com/architecture/glasgow-riverside-muse-um-of-transport/)

Figure 24: Spaced Channel Glass
(http://www.fireglass.com/email/hot_topics/2010/09/)

Figure 25: Naturally Vegetated Bioswale
(http://www.cornellplantations.org/get-involved/giving/new.garden.gifts)

The zinc cladding was chosen in the design process to offset the extensive use of corten and give a similar weathering effect (Figure 23). The standing seam panels are used as a way to break down the scale of the built environment. Rather than using large swathes of the material, the seams are located at twelve inch intervals that a human mind will, either consciously or subconsciously, relate to the proportions of their body.

Spaced channel glass is used as a visual barrier on the parking facility portion of the building but allows the area to be well ventilated (Figure 24). During the evening hours, the glass gives off a soft glow that will allow the surrounding community to be aware of activity within the building without clear lines of sight inside. As the building becomes adapted for other uses in the future, the panels may be easily reconfigured to accommodate the needs of that use.

The green space developed in the center of the site is meant to reclaim a natural landscape by the use of locally sourced vegetation on the recovered bayou. Visitors of the site experience a sense of history and connection to nature while transitioning through the courtyard. The heavily vegetated courtyard and bioswale are slightly exposed from the market and draw people inward. An example of this vegetation is portrayed in Figure 25.

PROGRAMMATIC CASE STUDY

The original primary program component of the HAIL project consists of transient housing units for the families and patients of the VA Hospital who may be traveling from far distances. Patients of the hospital come from eastern Arkansas, western Tennessee and northern Mississippi for regular treatment. The site and surrounding community is lacking temporary housing for users who would benefit by having a low cost option for short term or temporary housing. As the site and surrounding community was studied further, it became apparent that users that may not be associated with a patient may elect to stay in one of the units.

Figure 26: FedExFamilyHouse
(http://www.lrk.com/cms.aspx?TabID=726)

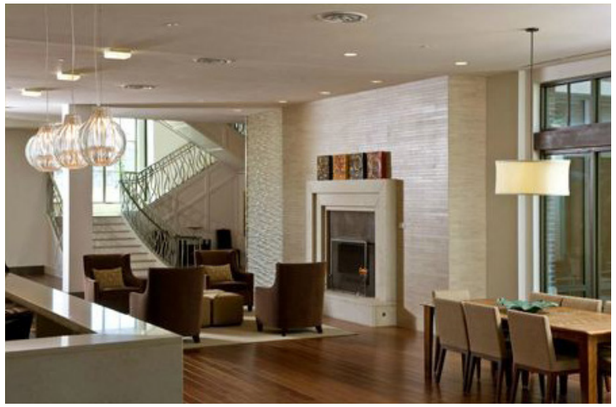


Figure 27: FedExFamilyHouse
(http://www.lrk.com/cms.aspx?TabID=726)

Figure 28: FedExFamilyHouse
(http://www.lrk.com/cms.aspx?TabID=726)

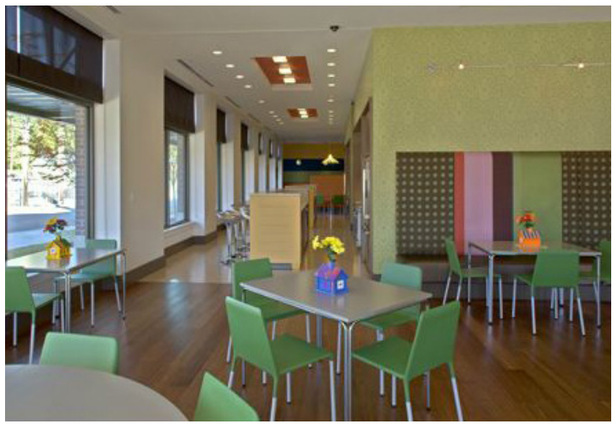


Figure 29: FedExFamilyHouse
(http://www.lrk.com/cms.aspx?TabID=726)

Figure 30: FedExFamilyHouse
(http://www.lrk.com/cms.aspx?TabID=726)

The programmatic elements as well as the mission of the FedExFamilyHouse match perfectly to the goals of the transient housing program element of HAIL (Figures 28-39). Within the building, the spaces are arranged to inspire a sense of community and support to the families of critically ill children being treated at LeBonheur Children's Medical Center located within a walkable proximity to the site.

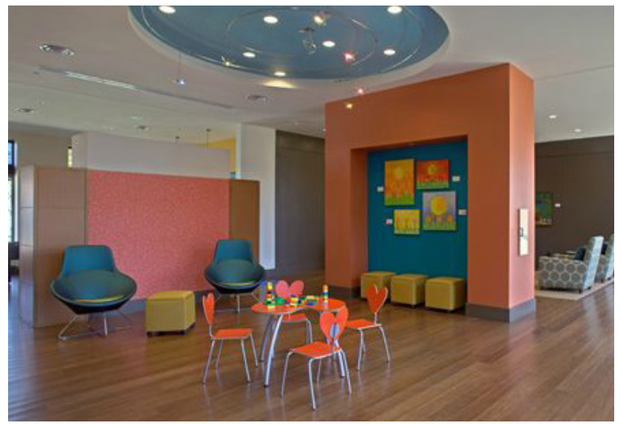


Figure 31 FedExFamilyHouse
(http://www.lrk.com/cms.aspx?TabID=726)

Figure 32: FedExFamilyHouse
(http://www.lrk.com/cms.aspx?TabID=726)

Figure 33: FedExFamilyHouse
(http://www.lrk.com/cms.aspx?TabID=726)

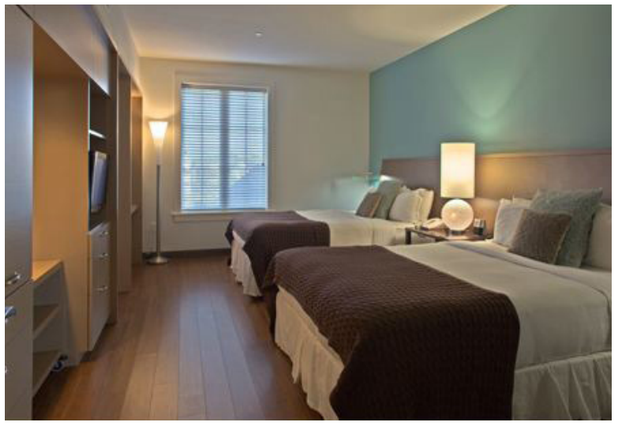


Figure 34: FedExFamilyHouse
(http://www.lrk.com/cms.aspx?TabID=726)

Figure 35: FedExFamilyHouse
(http://www.lrk.com/cms.aspx?TabID=726)

Figure 36: FedExFamilyHouse
(http://www.lrk.com/cms.aspx?TabID=726)

Figure 37: FedExFamilyHouse
(http://www.lrk.com/cms.aspx?TabID=726)

Figure 38: FedExFamilyHouse
(http://www.lrk.com/cms.aspx?TabID=726)

Figure 39: FedExFamilyHouse
(http://www.lrk.com/cms.aspx?TabID=726)

SITE IDENTIFICATION

Several factors were important in the choice of this site location. First of all, there is a personal connection to the site while helping my grandfather to doctors appointments. The experience of the hospital starts as one approaches the parking lot. The scale of the lot has a certain psychological effect. This site was chosen specifically to address the issue of an urban landscape being designed with the automobile in mind, rather than the human experience.

As viewed in Figure 40, the parking lot is completely void of elements that represent the human scale and give the community a sense of place. The objective of this thesis is to reclaim an automobile centric landscape to create a place designed for human experience.

The site serves the Veteran's Affairs Medical Center for parking and also features a fast-food casual dining restaurant on the corner with limited healthy dining options. As the surrounding community increases in density and amenities, the site in its current condition is critically detrimental to the vibrancy, sense of place, and sense of human experience. Of all other large parking lots in the city of Memphis, this site was specifically chosen due to the many different aspects of urban planning and community connectivity that will be described in the subsequent chapters.

Figure 40: Existing Site Aerial View
(Google Earth)

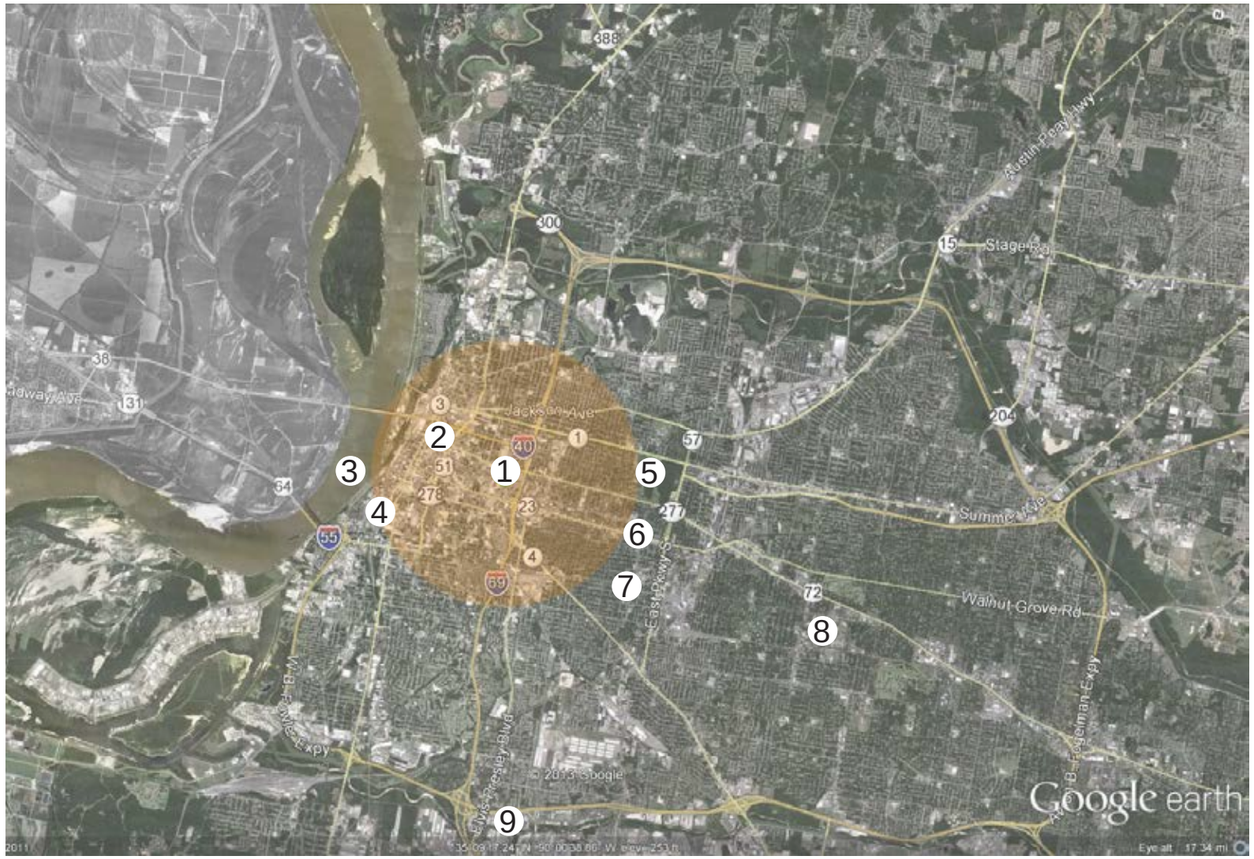


Figure 41: Regional Map
(Author)

1. Site Location: Veterans Affairs Medical Center West Parking Lot
   943 Poplar Avenue
   Memphis, TN 38104
2. Downtown Memphis: 1.0 Mile West
3. Mississippi River: 2.0 Miles West
4. South Main Arts District: 2.5 Miles Southwest
5. Memphis Zoo: 2.5 Miles East
6. Overton Square: 2.75 Miles Southeast
7. Cooper Young Disctrict: 3.5 Miles Southeast
8. The University of Memphis: 5.5 Miles East
9. Memphis International Airport: 10 Miles Southeast

REGIONAL ANALYSIS

On the regional level, relationships are formed relating the site to other landmarks in the region of Memphis, Tennessee. This strategic location will allow the proposed design to provide amenities for more than the immediate community. This could also promote an increased economic viability to the region as the proposed project will promote transportation connectivity and community activity, rather than disconnecting urban centers across the city by designing car centric landscapes (Figure 41).

Figure 42: Urban Analysis Map
(Author)

In Figure 42 the urban analysis describes the existing conditions of the immediate neighborhood. The images outlined in orange represent buildings that have been built recently and contribute to the growing density and vibrancy of the surrounding community.

Figure 43 is focused on the immediate site in study and notes important features that will contribute to the design process.

Figure 43: Site Analysis Character Study
(Author)


Aerial view from northwest


Aerial view from northeast


Aerial view from southwest


Aerial view from northwest


Aerial view from southeast


Aerial view from southwest


Aerial view from northeast


Aerial view from southeast


Aerial view from overhead

Figure 44: Site Aerial Study
(Author)

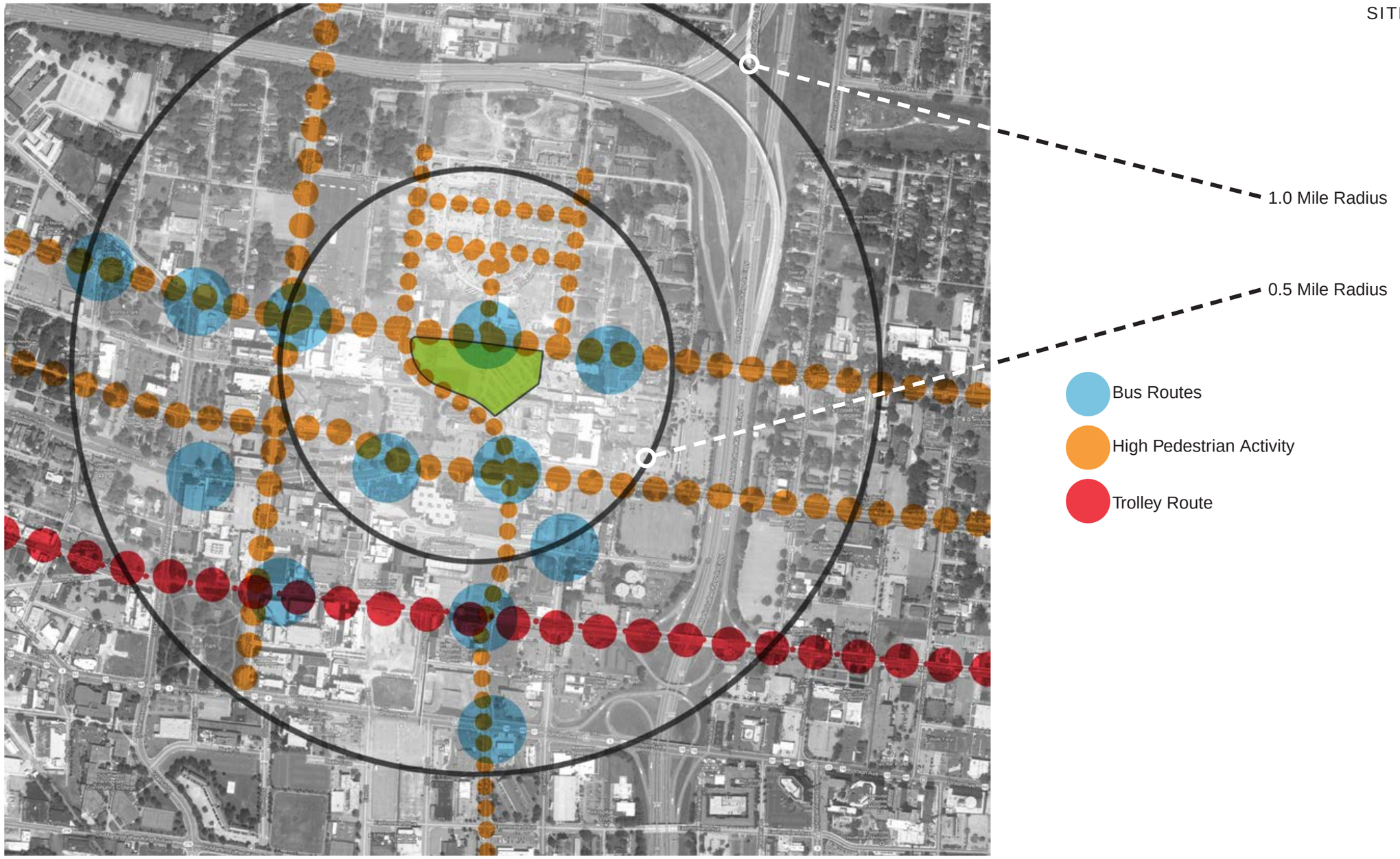


Figure 45: Mobility Diagram
(Author)

SITE ANALYSIS

The site of the VA Hospital is located in a district of Memphis called “The Medical District”. This area falls under a city and county regulated Unified Development Code that regulates new design work. As outlined in Figure 46, the site’s northern boundary required an urban frontage. See the green circle indicating the site location. This requires that the building setback be between seven and fourteen feet from the sidewalk. The proposed design of HAIL is in full compliance of the Unified Development Code for issues regarding proper relationships to the street in an effort to create a better human experience. See Appendix B for a full review of the Medical District Overlay guidelines.

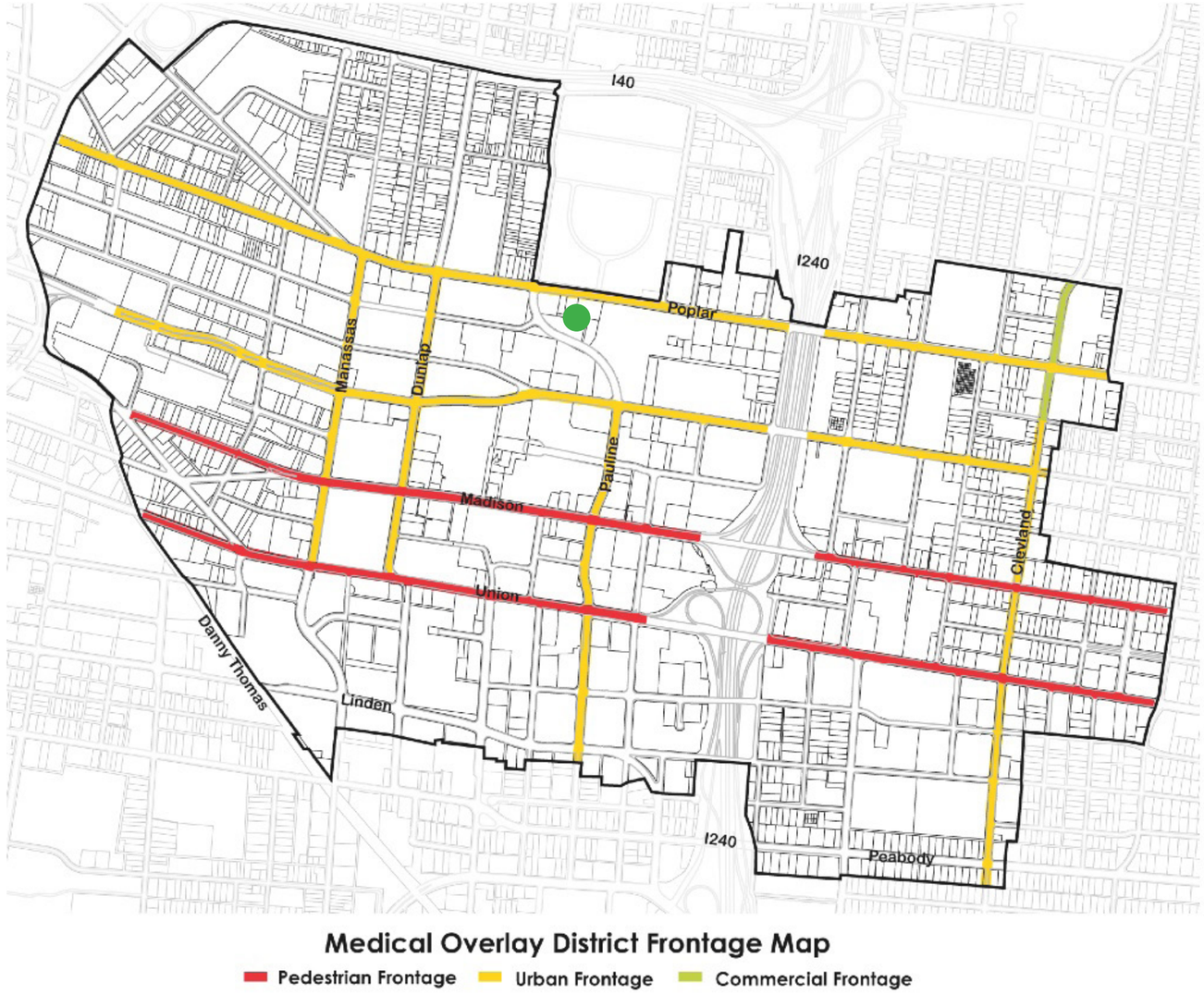


Figure 46: Frontage Map for the Medical District
(http://memphis.code-studio.com/PDF/UDC_Adopted_8-10-10.pdf)

The image below shows the limited existing site connectivity and relationships between major nodes of activity. The image to the right proposes taking advantage of the existing features of the site and capitalizing through the design to increase urban connectivity (Figures 47-48).

Figure 47: Existing Circulation / Major Intersections
(Author)

Figure 48: Proposed Circulation / Major Intersections
(Author)

SITE HISTORY

Analysis of the site history discovered that a bayou, channelized in the 1970's, runs underneath the proposed site and had been (Figures 49-50). This provided the design process with both a challenge as well as a unique opportunity to recover a lost landscape feature.

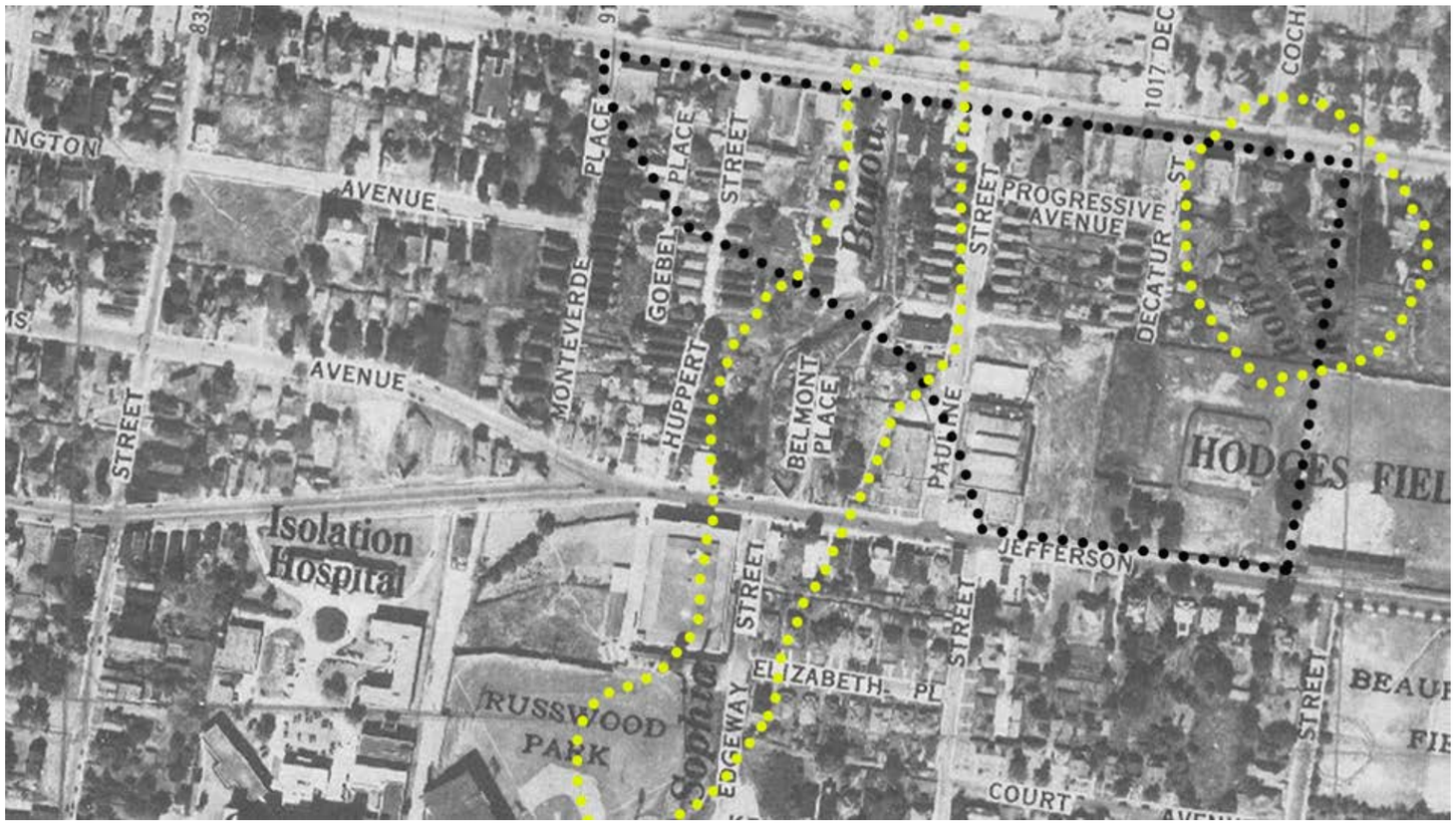


Figure 49: 1938 Aerial Outlining Sophia Bayou
(Author)

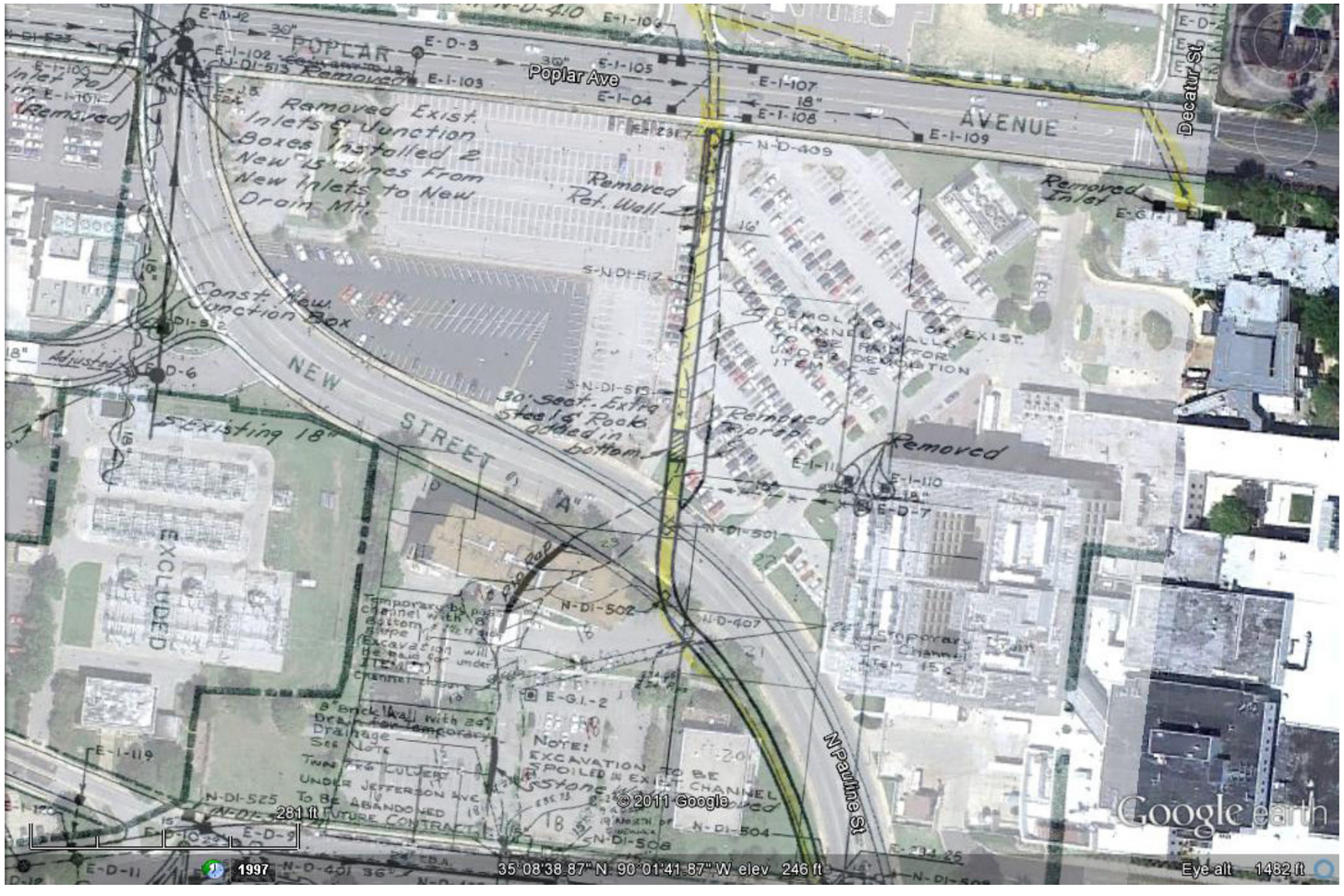


Figure 50: Location of Channelized Bayou
(LRK Architects)

PROGRAMMING

Upon concluding the site analysis, a program was developed to begin the design process. Table 2 shows the program quantities in square feet to help begin the design process accurately. The program helped to initially quantify spatial relationships and proper adjacencies. The program became a living document alongside the changing design process and adapted to it. Figure 51 shows the program as the elements initially related to the site conditions and proposed design relationships.

HAIL: ***Human Auto Integrated Lifestyle***

Room Name	Square Footage	% of Overall	% of Available	Equipment / Services / Notes	Qualities of the Space
	475000.00				
300 SF Parking Units (200)	60000	44	0.01		
Casual Dining		0	0.00		
Dining Room	2500	0	0.00		
Kitchen	750	0	0.00		
Women's Room	250	0	0.00		
Men's Room	250	0	0.00		
Mechanical/Electrical Room	150	0	0.00		
Storage Closet	50	0	0.00		
Janitor Closet	50	0	0.00		
Children's Daycare	3000	2	0.00		
Public Market	15000	11	0.00		With Parking; Accessible to public
650 SF Housing Units (80)	52000	38	0.01		
Lobby/Gathering	600	0	0.00		Connection to courtyard and public
Staff Office(s)	600	0	0.00		Open to Lobby
Break area	200	0	0.00		Open to Courtyard
Women's Room	250	0	0.00		Accessible
Men's Room	250	0	0.00		Accessible
Mechanical/Electrical Room	150	0	0.00		Opens to outdoors
Storage Closet	50	0	0.00		
Janitor Closet	50	0	0.00		Adjacent to Restrooms
Total	136150	100	28.66		

Table 2: Program Overview
(Author)

Figure 51: Spatial Adjacencies
(Author)

PROCESS

The overall form of the building was derived from the earlier research into the act of commuting, or transitioning from one activity to the next. Figure 52 demonstrates this concept three-dimensionally. The building was conceived as one continuous form with interjections of activity and vibrancy along the journey.

Figure 52: Initial 3D Process Model
(Author)

The process sketches illustrated in Figures 53-57 show the design evolving in density and human relationship with the automobile and site. The cross section of the parking deck is thought of as a traditional neighborhood street with a pedestrian zone in the center. This zone is an element that serves vertical circulation needs for the floors above and lets light into the lower level.

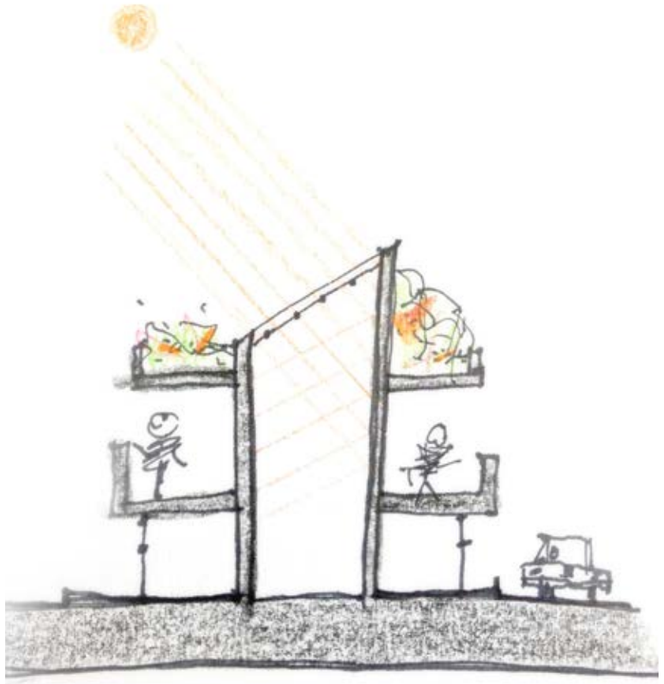


Figure 53: Process Sketch of Lightwell
(Author)

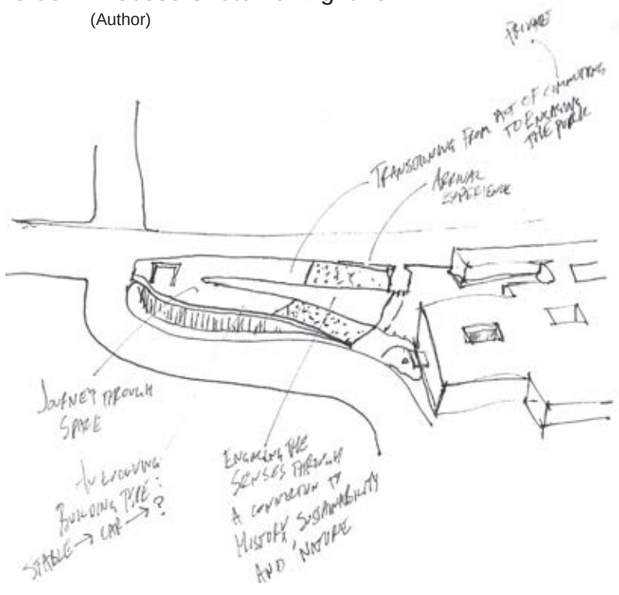


Figure 54: Process Sketch of Journey Experience
(Author)

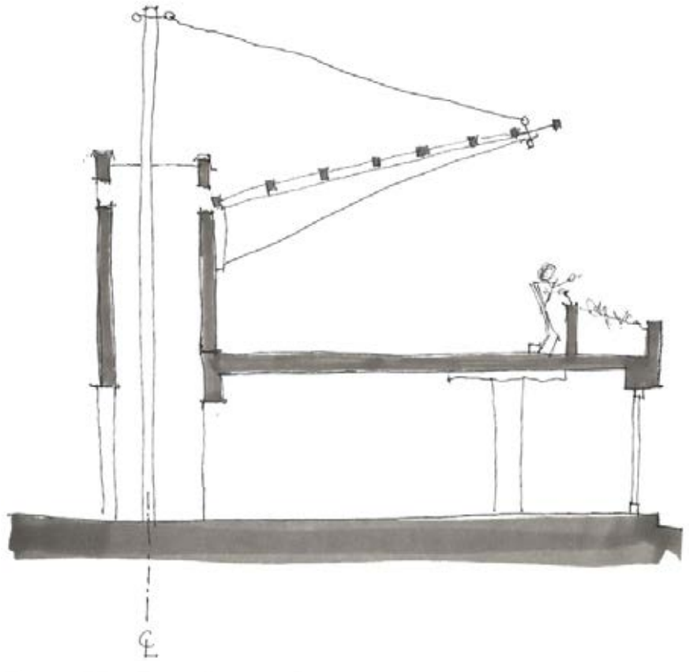


Figure 55: Early Section Detail
(Author)

Figure 56: Early Conceptual Site Plan
(Author)

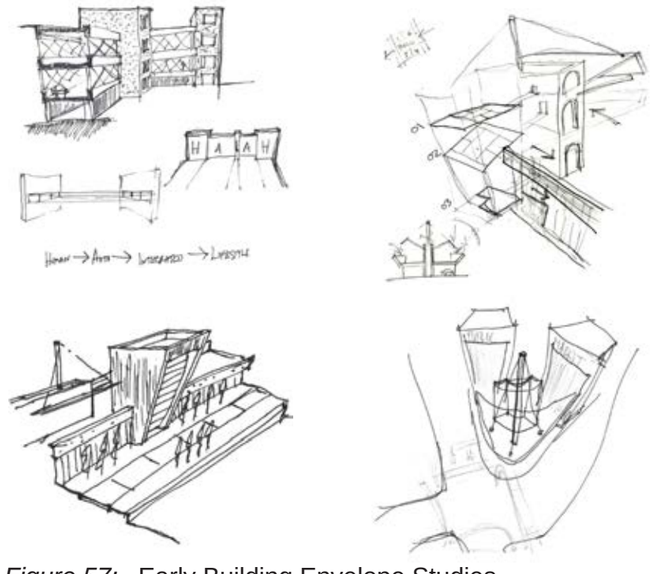


Figure 57: Early Building Envelope Studies
(Author)

PROCESS

The form of the building developed intuitively as a path interrupted by programmatic elements. While this design solution directly expressed the idea of a journey through the site, the nodes needed improvement and less isolation (Figure 58).

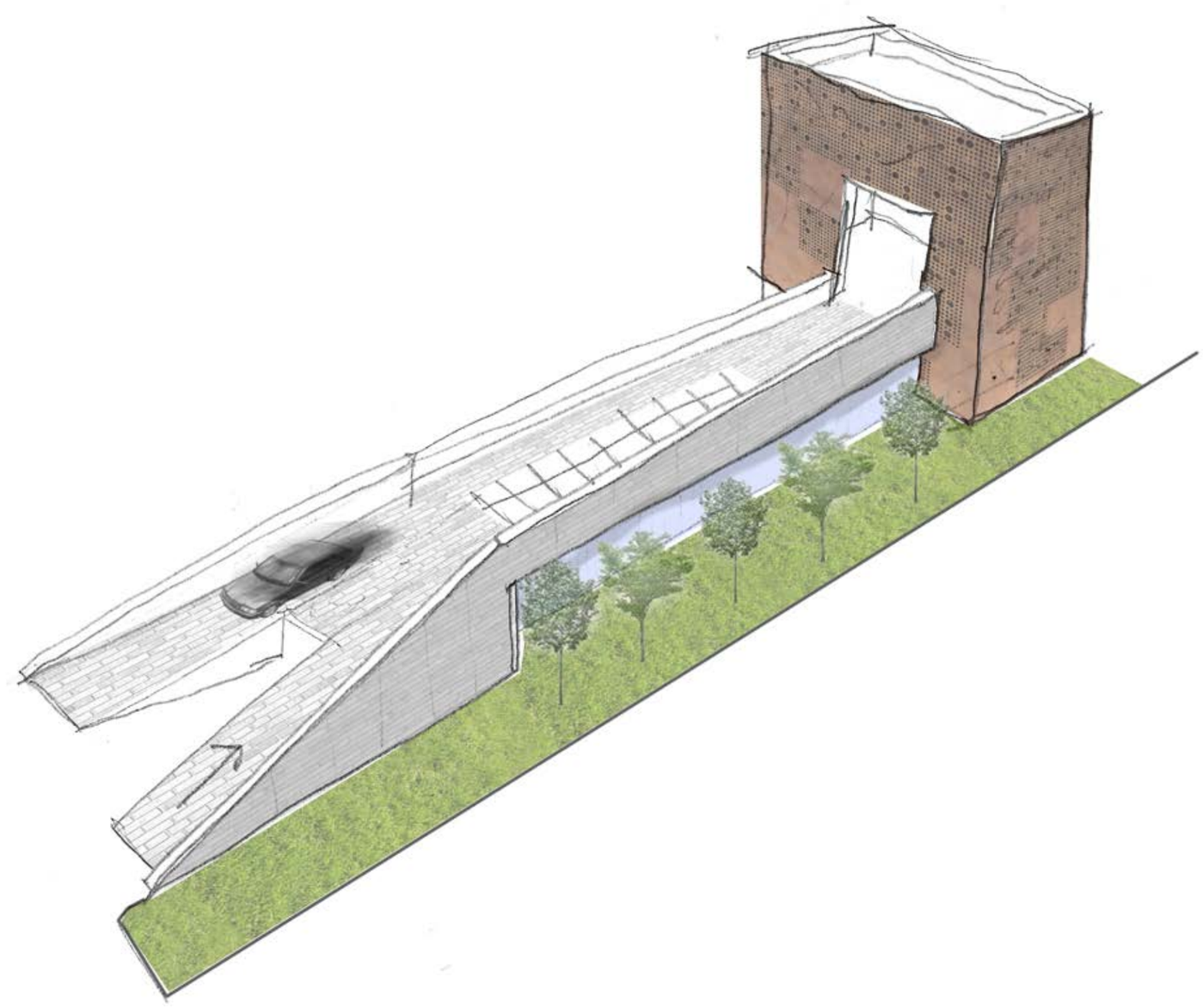


Figure 58: Initial Form Sketch of Parking Interrupted by Programmatic Elements
(Author)

The evolution of the building form expresses the concept more clearly (Figure 59). The points of activity were broken down and dispersed more freely through the site to create a better sense of diversity and community.

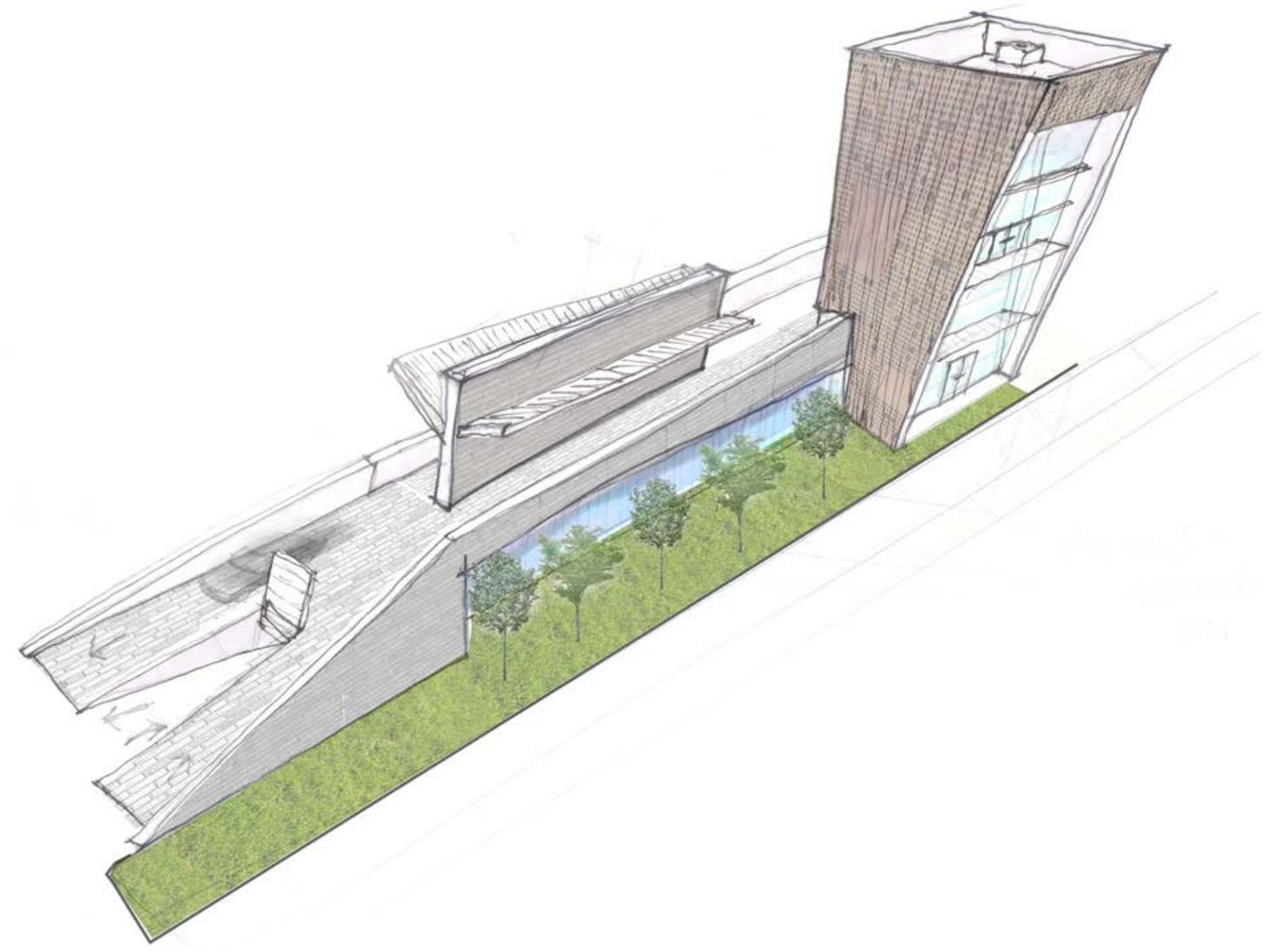


Figure 59: Final Form Sketch of Reconfigured Housing Unit
(Author)

Figure 60: Overall Site View
(Author)

Figure 60 is an aerial view from the south showing the overall site. This view helps to experience the project as a whole and feel the relationship of building form to the surrounding landscape. Figure 61 is the proposed site plan. The gray buildings are existing in the community and contributing to the urban fabric of the site. Orange building indicated on the proposed site plan are buildings which have been added to the community within the past few years. This is to help understand the trend of the neighborhood and to pick up on recent development that will help to promote the possibility and viability of HAIL. The green buildings do not exist today, but are indicated on the proposed site plan to realize the overall density that HAIL would be most successful in. A dense community will help to promote an urban environment that is less auto-centric, resulting in a more vibrant and safe public space.

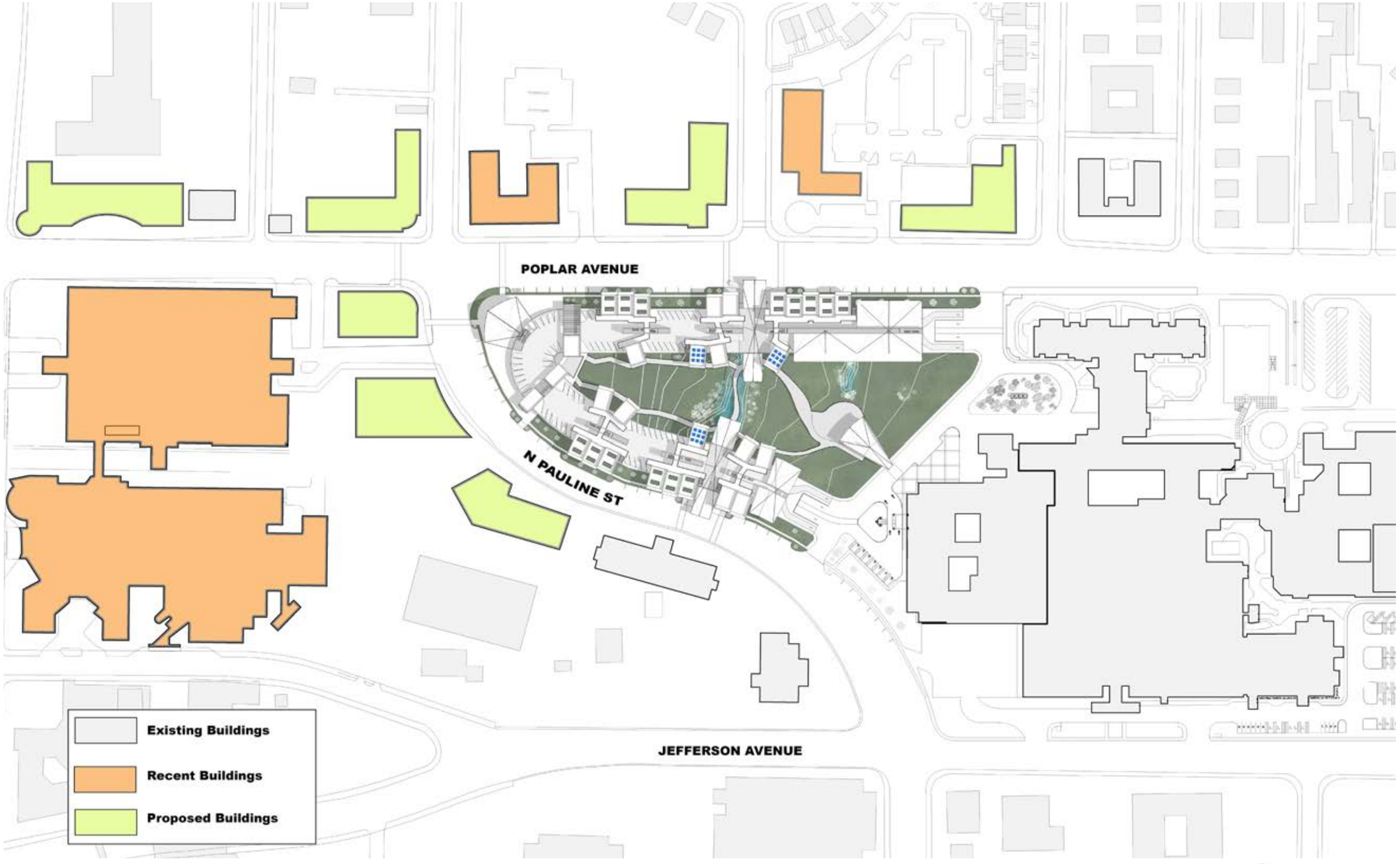
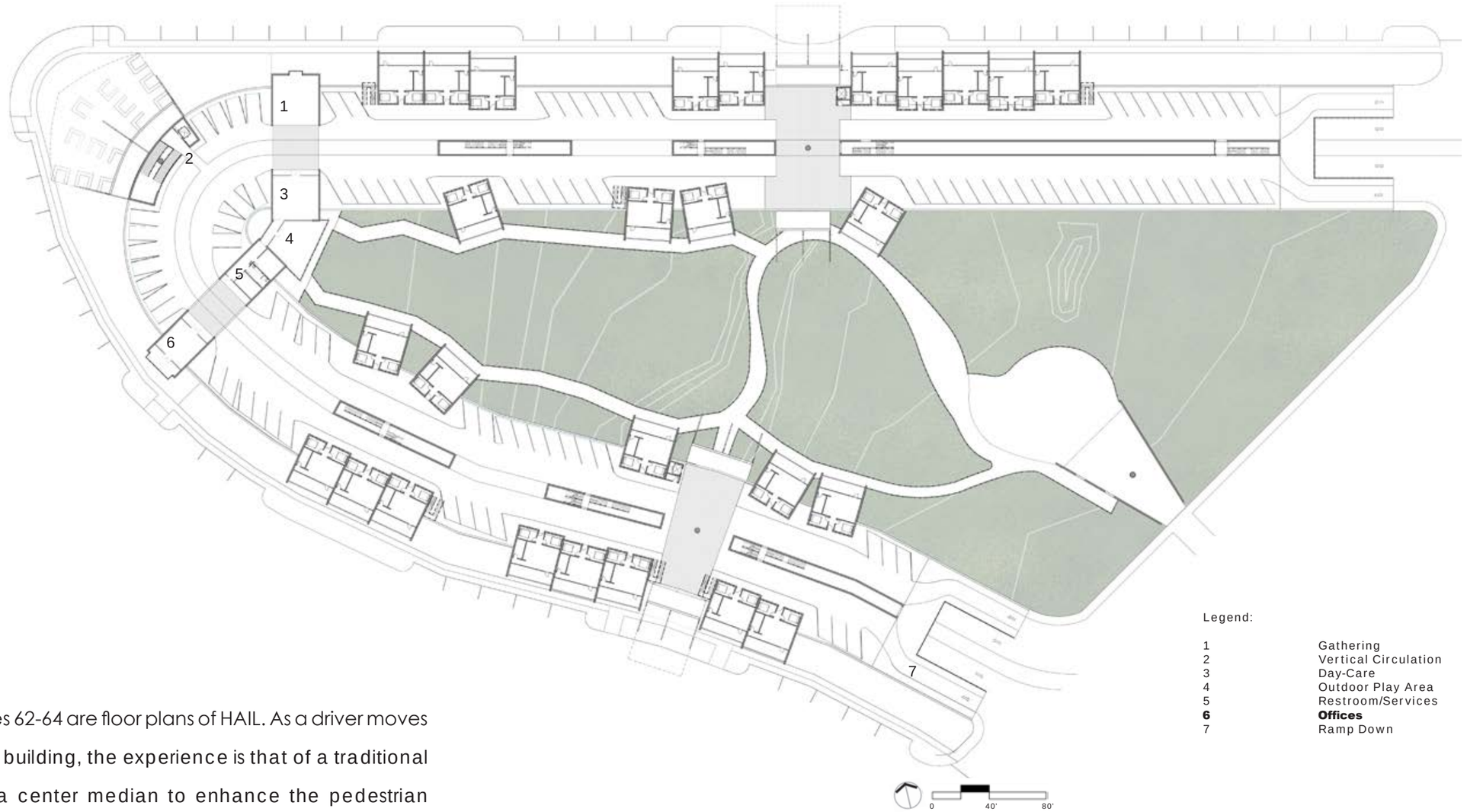


Figure 61: Proposed Site Plan
(Author)

Figure 62: Floor Plans of Ground Level and Lower Level
(Author)



Legend:

1	Gathering
2	Vertical Circulation
3	Day-Care
4	Outdoor Play Area
5	Restroom/Services || **6**	**Offices**
7	Ramp Down

Figure 63: Floor Plan of Second Floor
(Author)

Figures 62-64 are floor plans of HAIL. As a driver moves through the building, the experience is that of a traditional street with a center median to enhance the pedestrian experience. To create a more vibrant public market experience, the integration of the human and automobile is broken by diverting the automobile below grade. The subterranean experience is animated with a large lightwell and open vertical circulation tower connecting the plaza level.

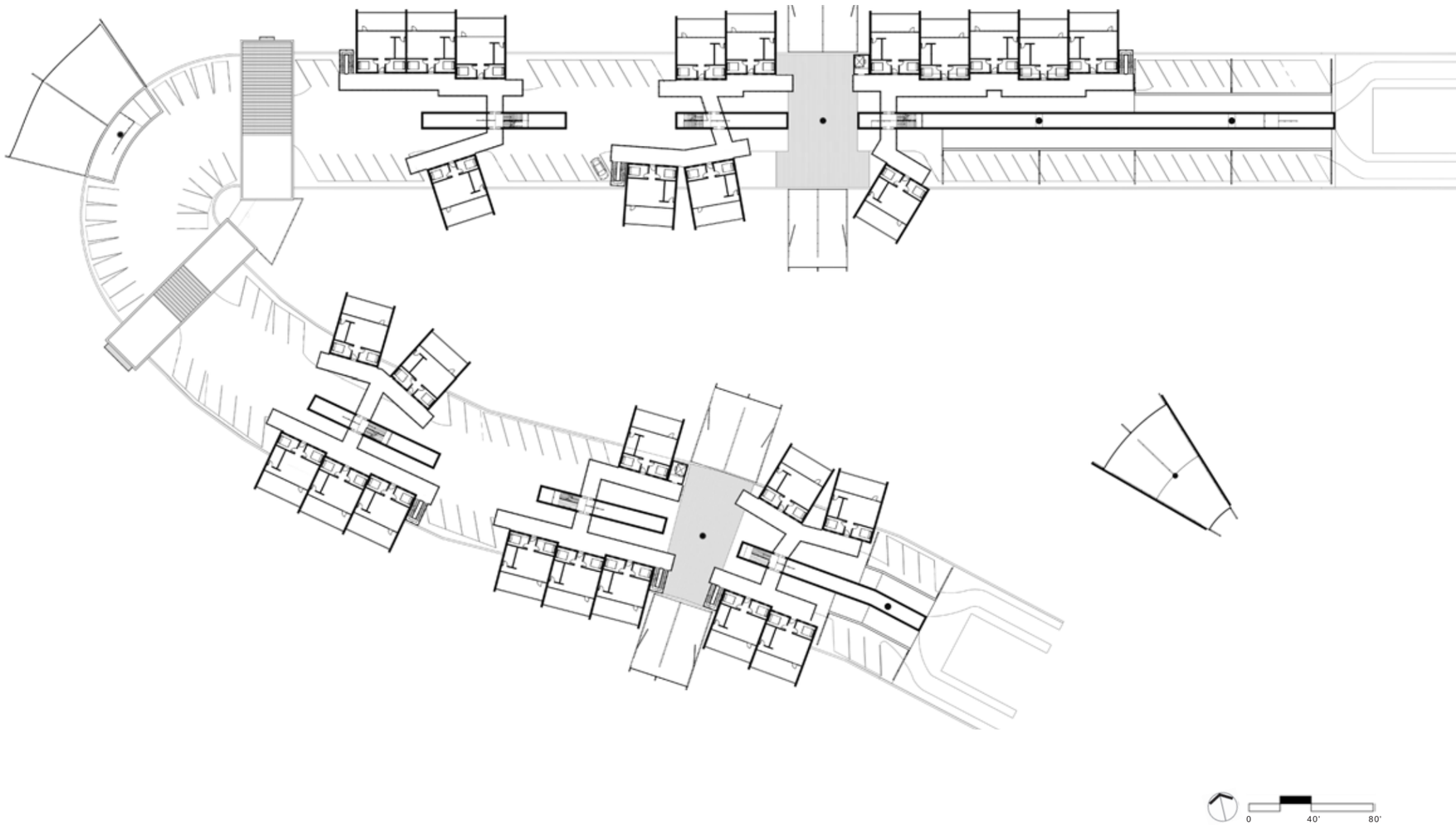
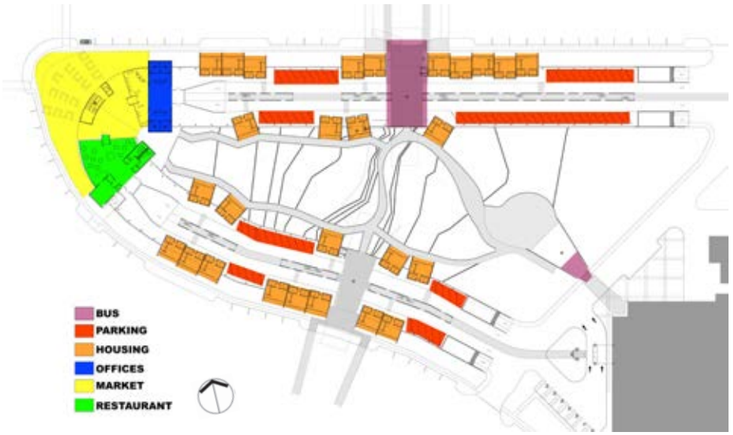


Figure 64: Floor Plan of Third Floor
(Author)

Figure 65: View Toward Stage
(Author)

Figure 65 is an experiential view of the vibrant courtyard space that is created by locating the buildings on the perimeter of the site and revitalizing the bayou into an open bioswale to be experienced by visitors to the site.

Figure 66 is a diagram outlining the present and future use layout of the building space uses. To meet the immediate parking needs for the hospital visitors and market-goers, the spaces are located within the new structure. As parking trends change, as the research indicates, the site will experience an evolution in use. What was formerly space dedicated to the storage of automobiles will become new commercial, service or retail use to be determined by the market at that time. By using a flat-plate structural system and modular channel glass panels on the building, where parking currently resides, the goal is to accept future uses with no need of extensive renovations. The surrounding community will benefit greatly by uses other than parking and these additional service will continue to grow the already improving urban density resulting in increased vibrancy and sense of place.



First Floor Proposed Present Use

First Floor Proposed Post-car Use

Figure 66: Current and Post-Car Use Diagrams
(Author)

As a driver approaching the site, the vehicular experience can be viewed in Figure 67. Depending on the parking plan for the current point in time, and the destination for the user, one may choose to stop at the bed tower to deliver a patient and/or continue into the structure on the lower level or drive up the ramps to get to the second floor vehicular access. The pedestrian experience is carefully negotiated at this point by providing walkways that are differentiated materially to create an awareness of human interaction to the driver.

Below, Figure 68 demonstrates a longitudinal site section that cuts through the site as shown in the key plan above the image. This point is critical to see the sloping bioswale and bayou that is the prominent landscape feature of the courtyard.

Figure 67: View in Car Approaching North Ramp
(Author)

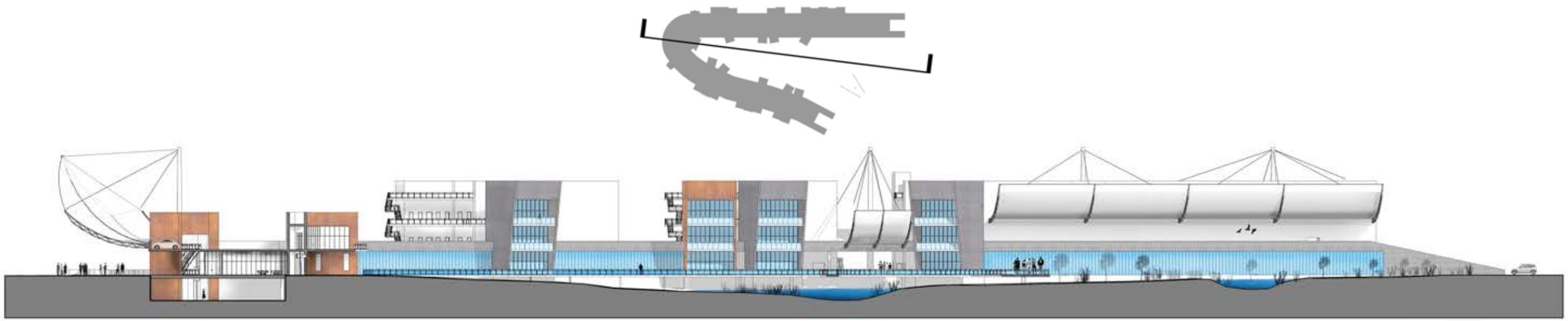


Figure 68: Longitudinal Site Section
(Author)

Figure 69: Event Stage and Gathering / MATA Plus Bus Shelter
(Author)

The buildings are arranged on the site to create an outdoor room that is designed to engage the visitors with the site's history. The channelized bayou has been revitalized and the surrounding landscape has been returned to a natural state in places to express the vegetated bioswale. Figure 69 portrays a view standing on the elevated deck system of pedestrian connection that passes through the courtyard. The terminus of the direct pedestrian path from the main bus stop to the bed-tower entrance is framed by a covered waiting area for the MATA Plus bus stop. MATA Plus is a program that the Memphis Area Transit Authority offers its riders that have disabilities that live within the Memphis service area and cannot ride the fixed route bus system. The placement of this feature on the site is part of the effort to minimize the need for excessive amounts of parking. Users of the site and hospital may be more inclined to use the MATA Plus service rather than having to arrange family members or other means to get to the site.

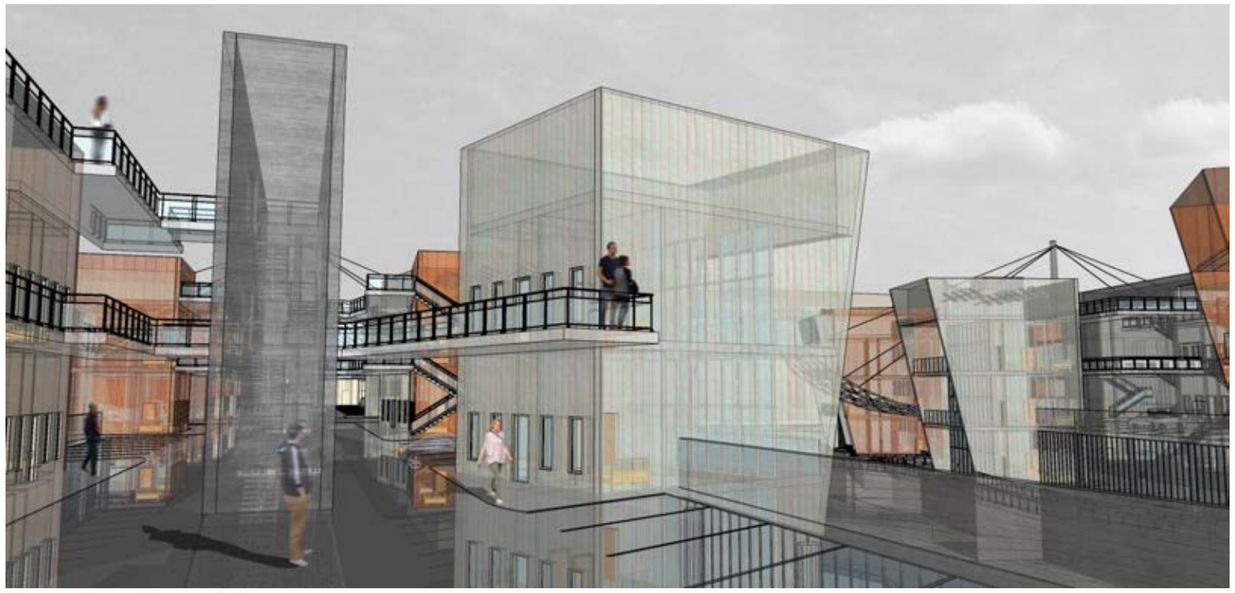


Figure 70: "Street" Connection
(Author)

Figure 70 is to explain the design intent of the "street" experience aspect of the building. By carefully integrating parking and programmatic uses, people feel connected to one another and less isolated resulting in an overall vibrant and animated sense of place. The "median" in the center of the street is to connect humans vertically through open staircases, and also to allow light into the lower level, removing the typical darkness and unsafe feeling of parking structures. The drawing is shown in a slight x-ray view to see through the layers of form in an attempt to better explain the spatial relationships. Figure 71 is a transverse building section cutting all the through the site to further explain these qualities. Figure 72 is an aerial view from the north showing the overall site of HAIL.

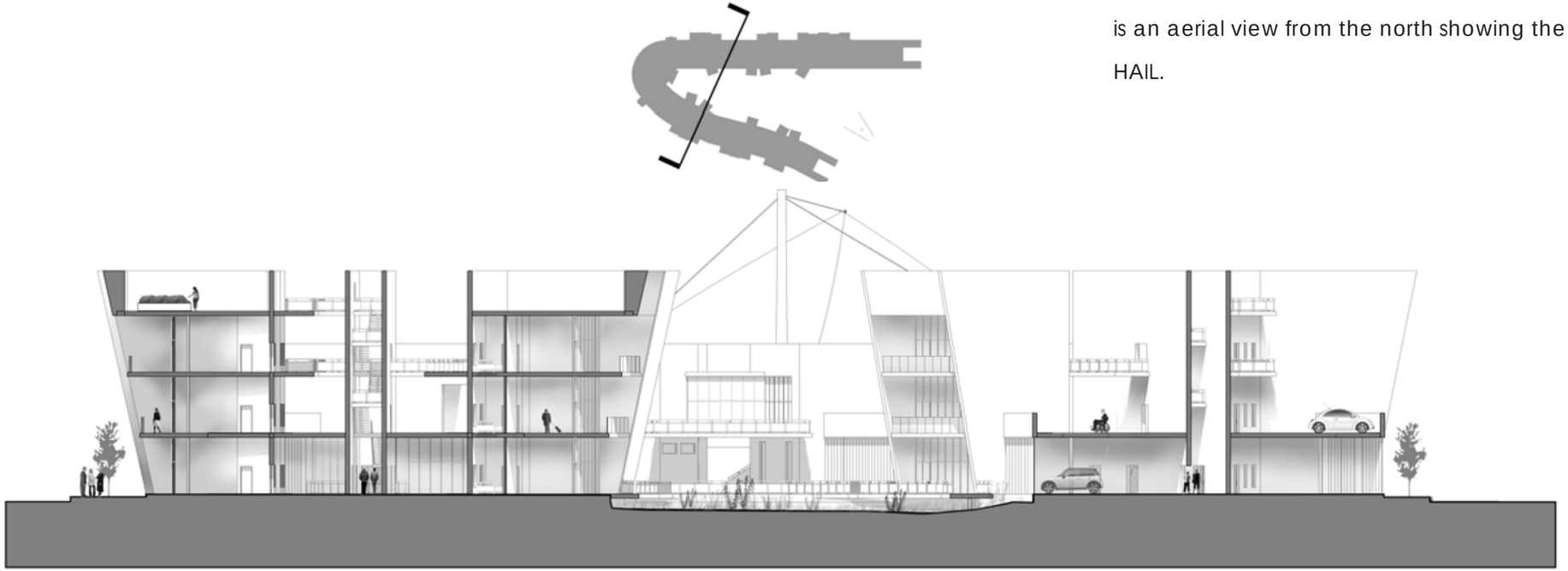


Figure 71: Transverse Site Section
(Author)

Figure 72: Northern Aerial View
(Author)

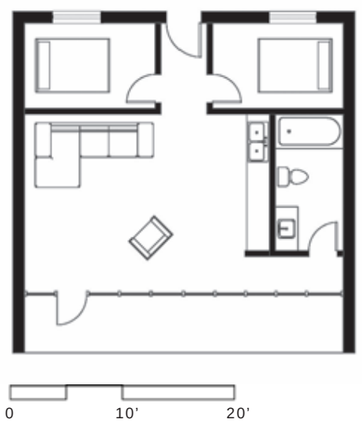


Figure 73: Typical Living Unit
(Author)

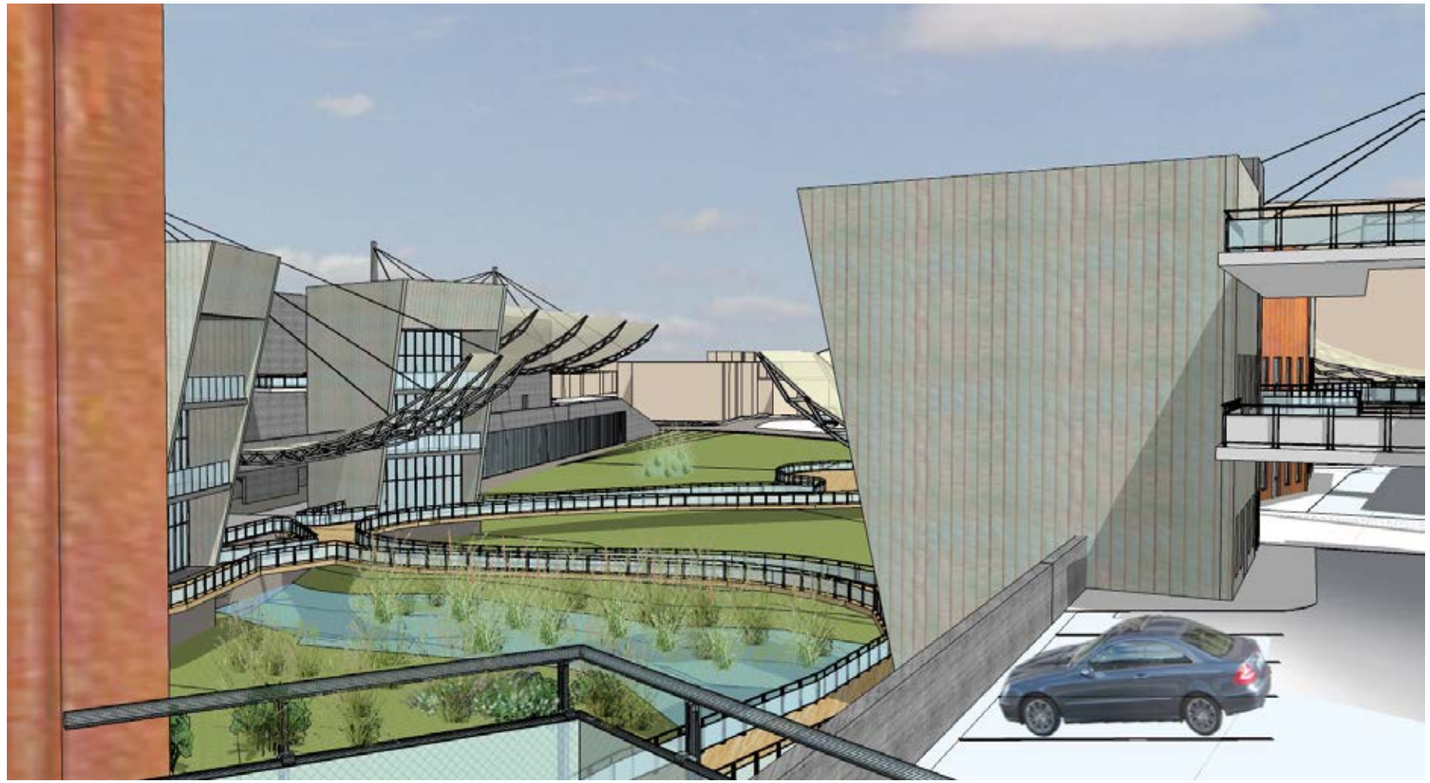


Figure 74: View to Courtyard
(Author)

Figure 75: Pauline Street Elevation
(Author)

Figure 76: Bus Stop
(Author)

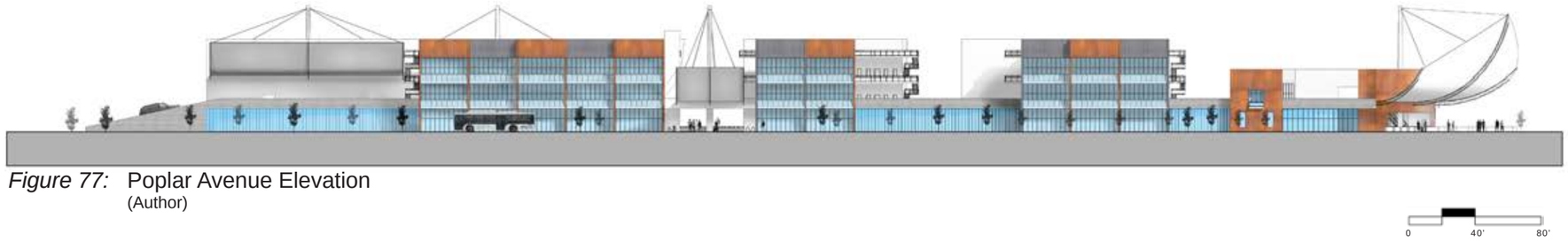


Figure 77: Poplar Avenue Elevation
(Author)

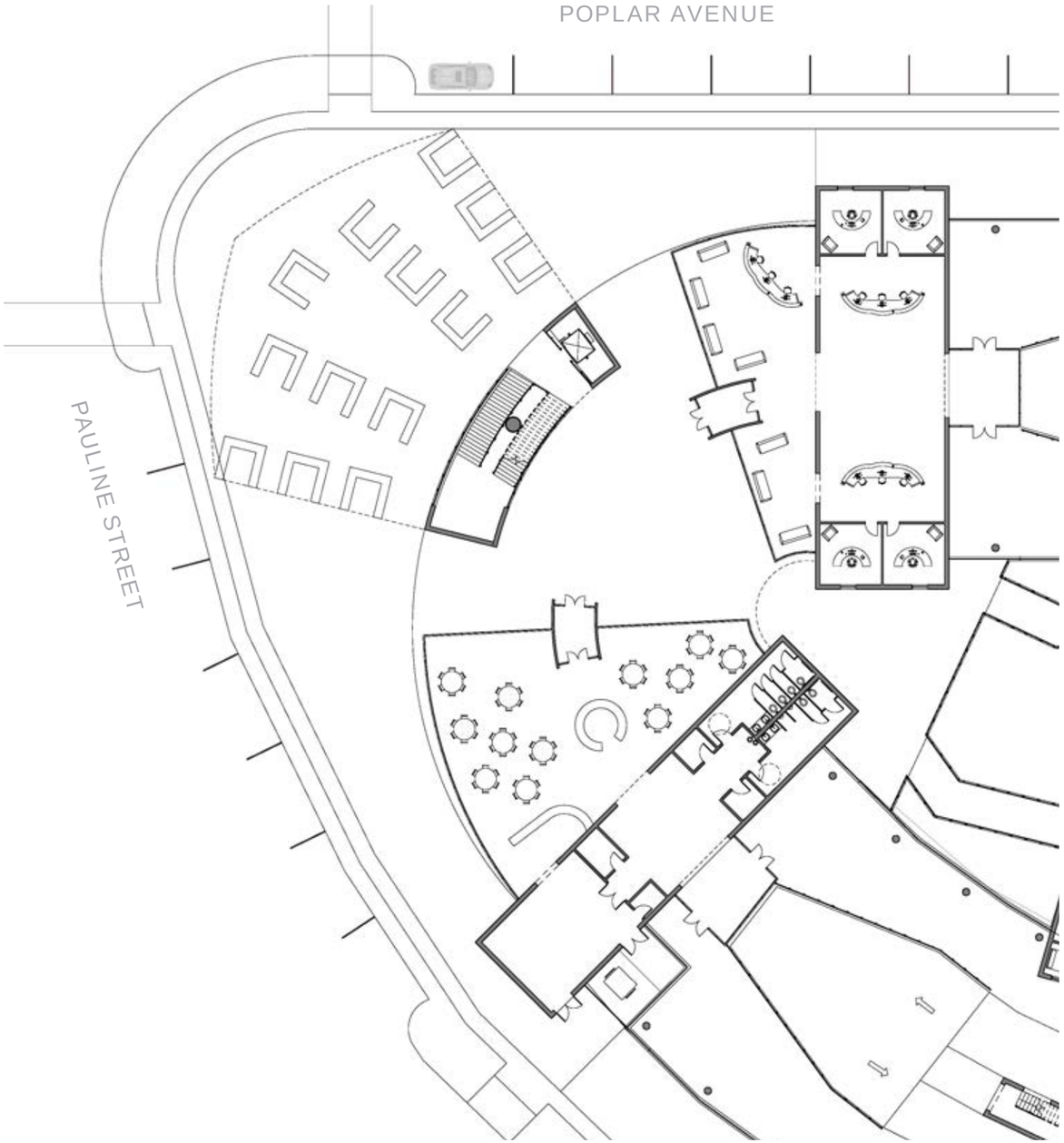


Figure 78: Enlarged Floor Plan of Plaza
(Author)

The public market is located on the corner of Paulne and Poplar Avenue. This main programmatic element encompasses the focal point of the project and the gateway to HAIL. Figure 78 is a floor plan view of only the plaza area, where the market space, restaurant and administrative offices are located.

Figure 79 is a three dimensional rendering of what that experience is like as one may approach from the west to the prominent corner. This view is a major improvement from the pedestrians standpoint versus the auto-centric landscape that is present today. The large canopy covering the corner market stalls is curvilinear in form, reaching out to the community and welcoming them in. The translucent membrane water collector recharges the revitalized bayou, that lies beyond the plaza.

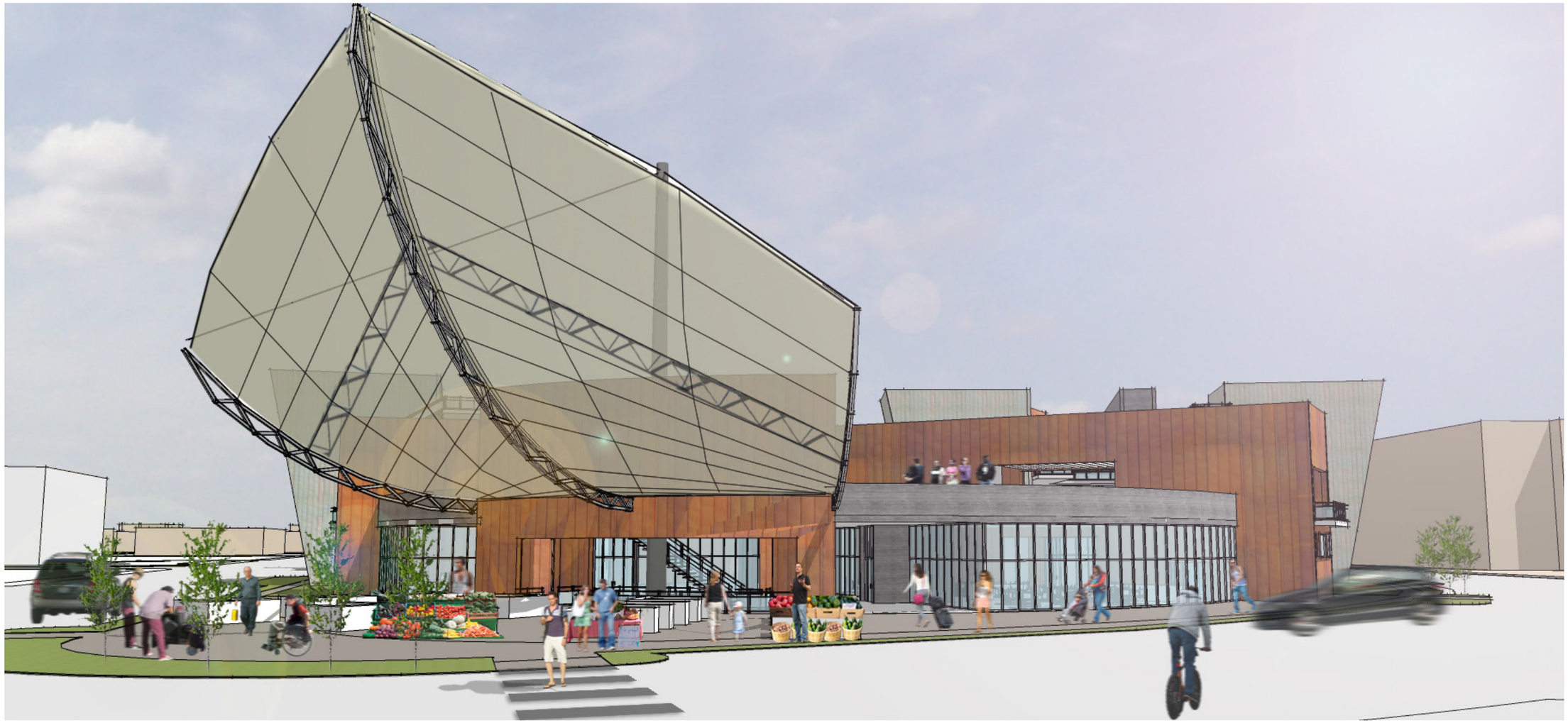


Figure 79: Western Approach
(Author)

Figure 80: Plaza View to Courtyard Beyond
(Author)

As visitors pass the plaza, they are given a glimpse into the heavily vegetated landscape beyond and are welcomed in to pause and reflect while on their journey (Figure 80). The covered interstitial space that acts as a gateway to the courtyard beyond is a diverse place where chance encounters and interaction becomes encouraged.

As HAIL is complimentary to the Veteran's Affairs Medical Center, the site logically must be handicap accessible. Figure 81 is a diagram locating universal design elements that respect those who may be disabled that encounter the site. Since the bayou changes elevation moderately towards the center of the site, pedestrians are routed through elevated decks that are coplanar resulting in complete accessibility.

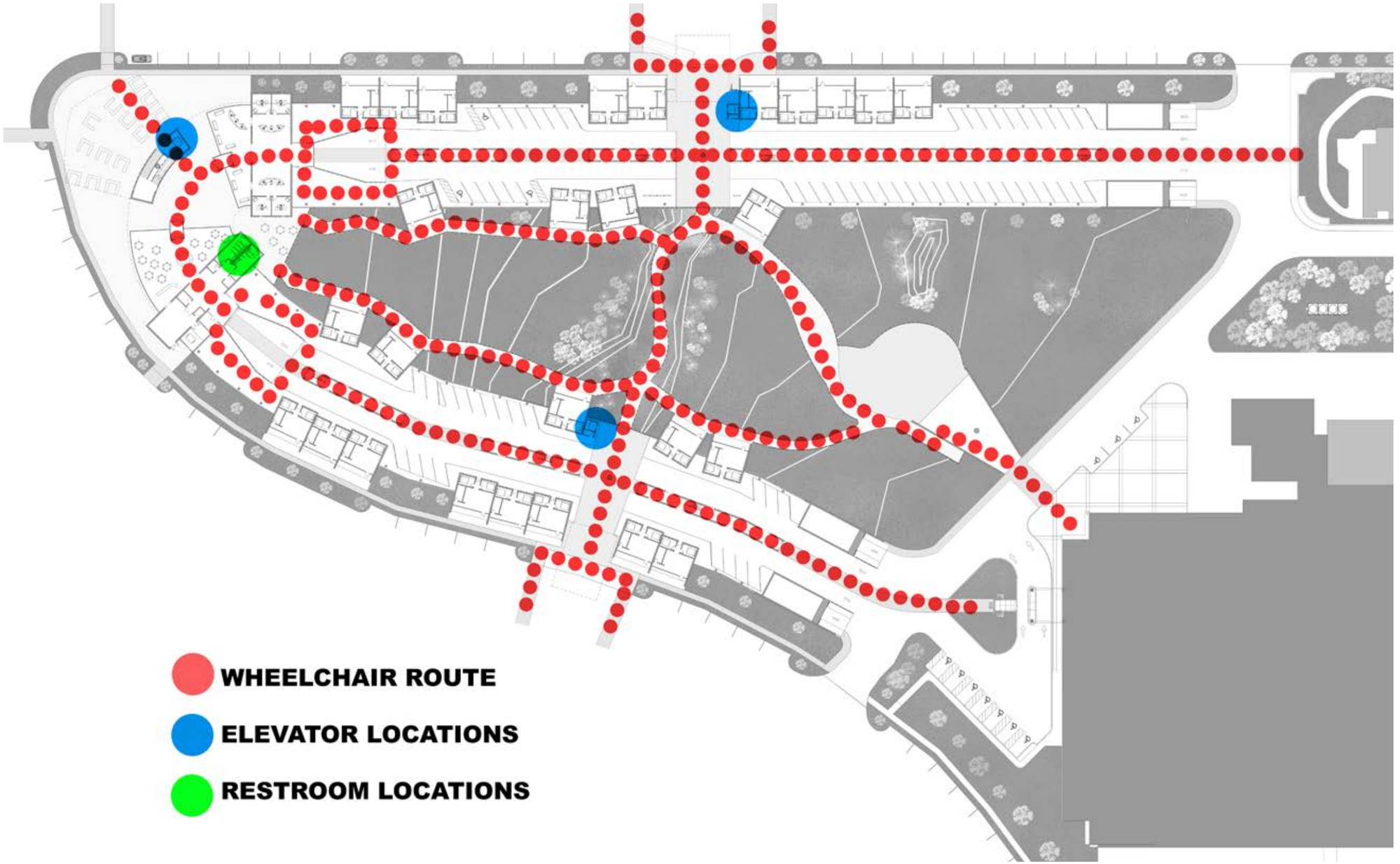


Figure 81: First Floor Accessibility Diagram
(Author)

CONCLUSION

This thesis is an example of how the built environment can respond to and influence the relationship between the automobile and our urban landscape to enrich human experience. The building is thought of as an asset to the community and a place to inspire a healthy environment to the visitors and patients of the Veteran's Affair's Medical Center.

As the profession of architecture moves into future design projects, this exercise can be used to guide important decisions regarding the future use of our built ideas. By asking what the future holds for the proposed design concept, architecture has the power to respond to changing cultural trends to create a building that will withstand the test of time.

REFERENCES

Bell, J. (2001). *Carchitecture*. London, UK; Boston: August ; Birkhäuser.

Corner, J. 1999. Recovering Landscape: Essays in Contemporary Landscape Architecture. New York, NY: Princeton Architectural P.

Dennis, K., & Urry, J. (2009). *After the Car*. Cambridge, UK: Polity.

Henley, S. 2007. The Architecture of Parking. New York, NY: Thames & Hudson.

Ingels, B. 2010. *Yes Is More: An Archicomic on Architectural Evolution*. Köln, DE: Evergreen.

Jacobs, J. 2011. *The Death and Life of Great American Cities*. New York, NY: Modern Library.

Kay, J. H. (1997). *Asphalt Nation : How the Automobile Took Over America, and How We Can Take it Back*. New York, NY: Crown Publishers.

Litman, T., & Victoria Transport Policy Institute. (2012). Transportation Land Valuation Evaluating Policies and Practices that Affect the Amount of Land Devoted to Transportation Facilities. Retrieved 01/12/13.

Nelson, A. C. (2009). Annals of the American Academy of Political and Social Science, Vol. 626, The Shape of the New American City, 192-208.

McDonald, S. S. (2007). *The Parking Garage: Design and Evolution of a Modern Urban Form*. Washington, D.C.: Urban Land Institute.

Reinberger, M. (1984). The Sugarloaf Mountain Project and Frank Lloyd Wright's Vision of a New World. Journal of the Society of Architectural Historians, 43(1), 38-52.

Shoup, D. C. 2005. *The High Cost of Free Parking*. Chicago,IL : Planners Press, American Planning Association.

Walker, D. E. (2011). 2011 City of Memphis Infrastructure Facts, 1.

HAIL: *Human Auto Integrated Lifestyle*

Can architecture influence the relationship between the automobile and our urban landscape to enrich human experience?

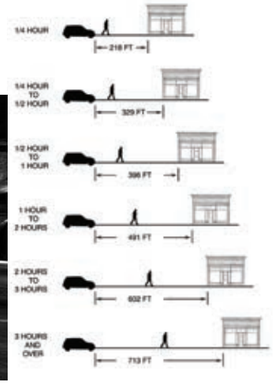
THE ISSUES:

- Car-culture is a part of our everyday lives and greatly influences our perception of experience through journey
- Urban landscape dominated by automobiles, with limited consideration for human experience
- The parking garage building typology is an evolving structure that needs human integrative design
- Community fabric has become disjointed by human-auto separation and lacks identity and sense of place
- With a declining number of motorists, how do we plan for the future?

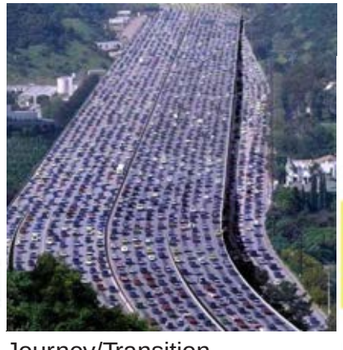
THE PLAN:

- Re-investigating the human-auto relationship by attempting integration of the two
- Providing transportation alternatives
- Designing in consideration of long term transportation needs based on usage to create a building that will withstand evolving into other uses to serve the needs of changing cultural amenities
- Recovering landscapes previously dominated by the automobile and creating vibrant public space that reconnects communities and human interaction
- Creating a rich and positive human experience through transitions of multiple space use types

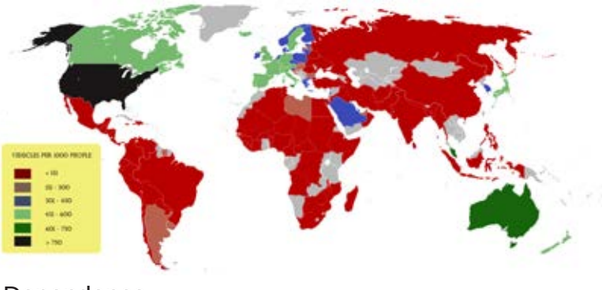
Carchitecture



Distance Walked



Journey/Transition



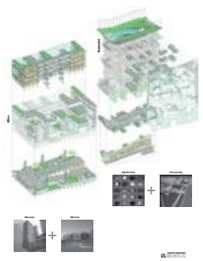
Dependence

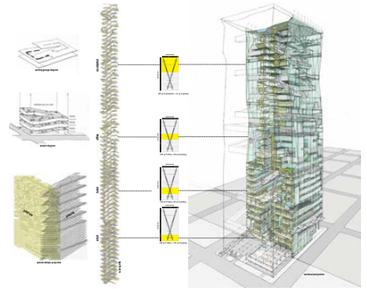
Decline

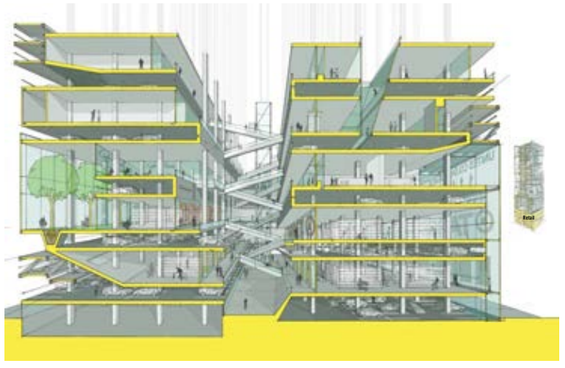
INTRODUCTION

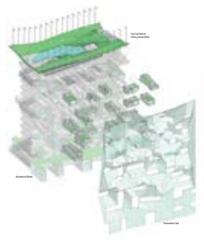
LTL Architects Park Tower at 2004 Venice Biennale

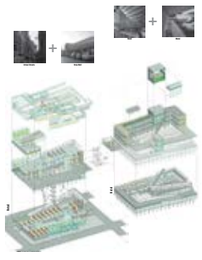
- Blur the line between parking and program
- Introduction of park-like setting on roof
- Well thought out experience of movement from car into building
- The idea of connection between different building types





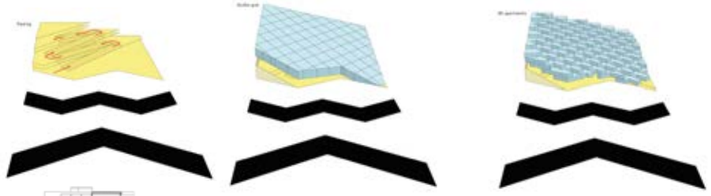


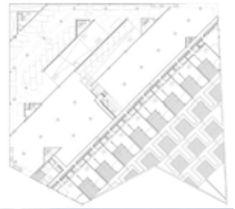




BIG Architects Mountain Dwellings in Copenhagen

- Creating a vibrant landscape through an ordinarily mundane building type
- Strong visual connection from parking to housing units
- Use of materiality and form promotes an iconic and memorable experience
- Typical block style economical housing and parking structures rethought





Translucent Membrane Collector

Standing Seam Corten

Wood Pressed Concrete

Zinc Cladding

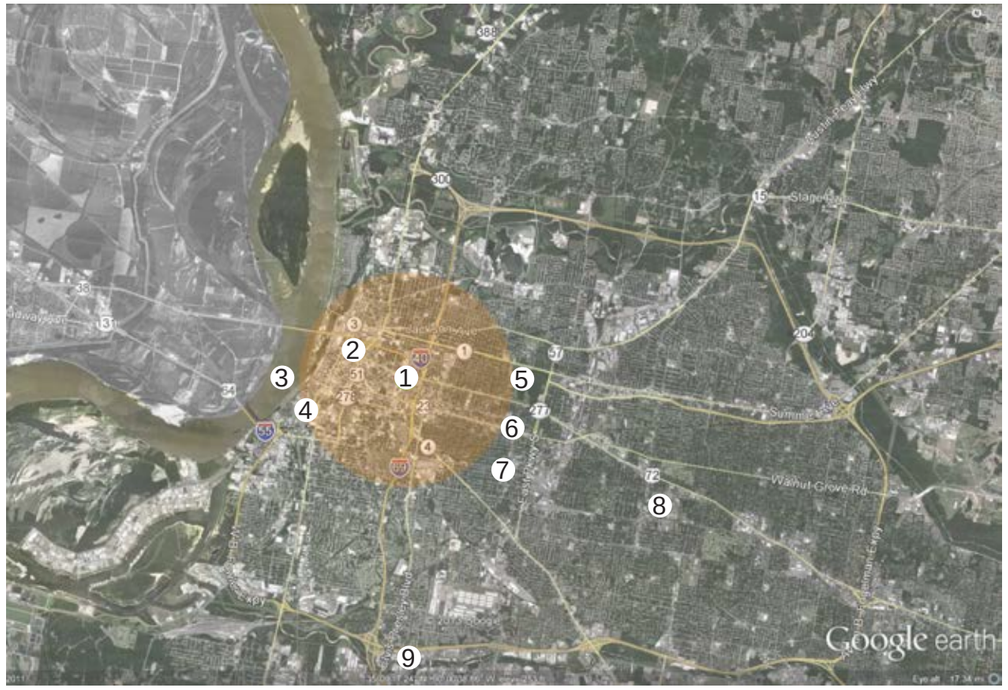
Spaced Channel Glass

Naturally Vegitated Bioswale

PRECEDENTS + MATERIALITY

HAIL: *Human Auto Integrated Lifestyle*

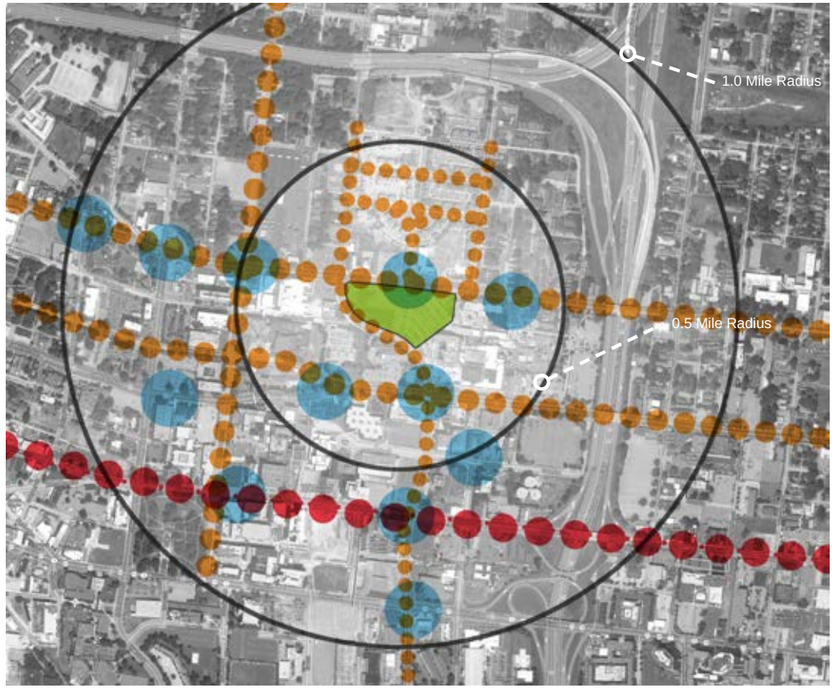
Regional



1. Site Location: Veterans Affairs Medical Center West Parking Lot
   943 Poplar Avenue
   Memphis, TN 38104

2. Downtown Memphis: 1.0 Mile West
3. Mississippi River: 2.0 Miles West
4. South Main Arts District: 2.5 Miles Southwest
5. Memphis Zoo: 2.5 Miles East
6. Overton Square: 2.75 Miles Southeast
7. Cooper Young Disctrict: 3.5 Miles Southeast
8. The University of Memphis: 5.5 Miles East
9. Memphis International Airport: 10 Miles Southeast

Transportation



Bus Routes
High Pedestrian Activity
Trolley Route

VA Hospital Bed Tower

Surface Parking Lot

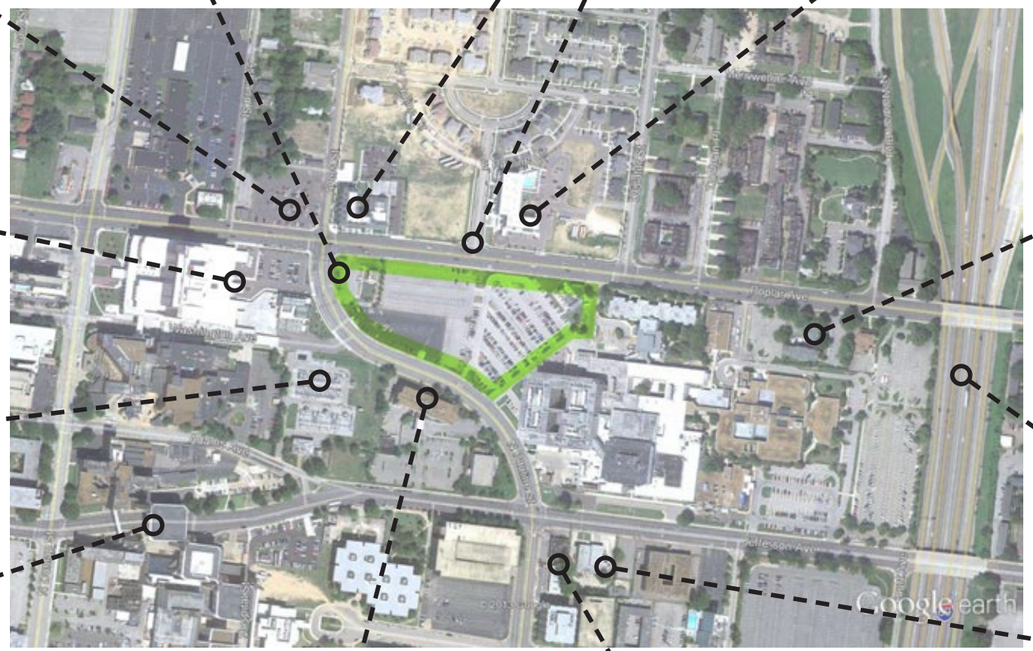
Church's Chicken

FedExFamilyHouse

Legend's Park Entrance

LeBonheur Rehab

LeBonheur Children's Hospital



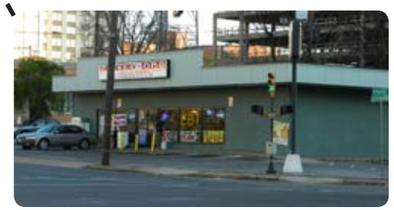
Memphis Child Advocacy Center

MLGW Electrical Substation

I-240

The Regional Medical Center at Memphis

Community Behavioral Health

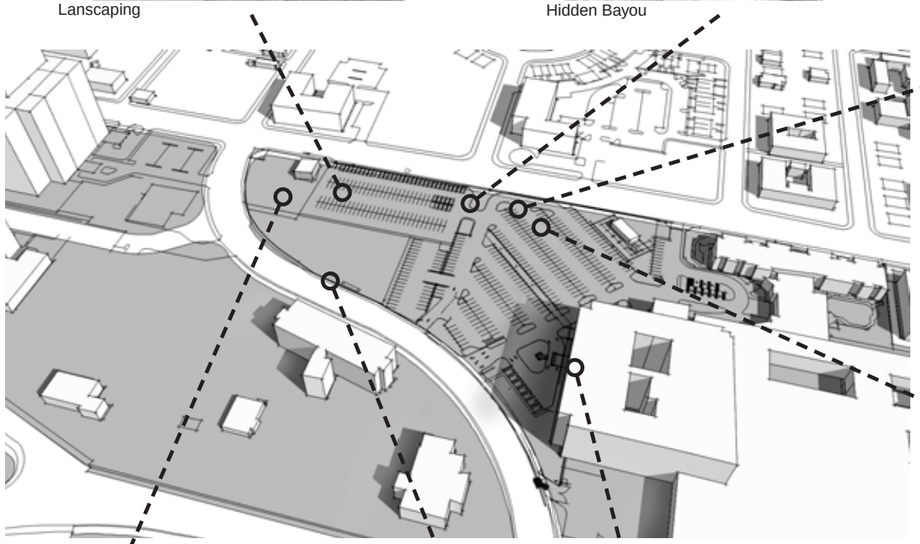


Grocery One Deli & Food Market

Fire Station No. 7

Lanscaping

Hidden Bayou



Bus Stop/Sidewalk Conditions

Existing Circulation / Major Intersections

Axial Approach

Proposed Circulation / Major Intersections

Church's Chicken Parking

LeBonhuer Secured Entry

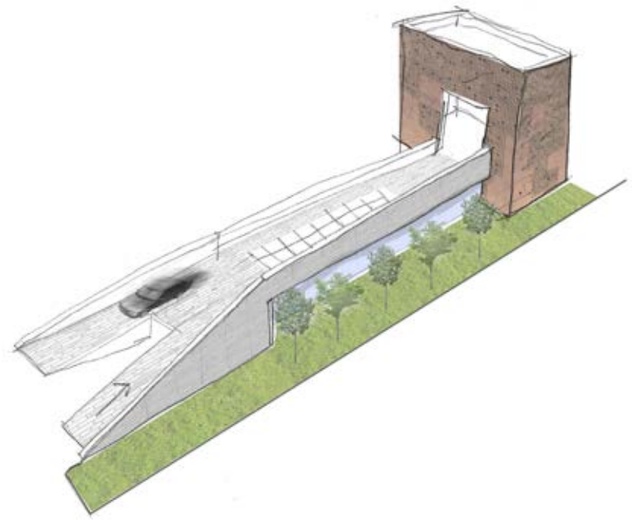
VA Entrance

SITE ANALYSIS

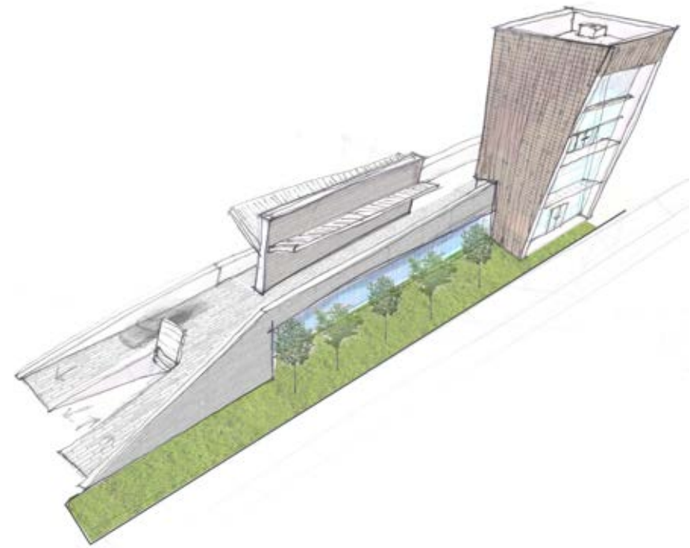
HAIL: *Human Auto Integrated Lifestyle*

Spatial Adjacencies

Moments of Transition



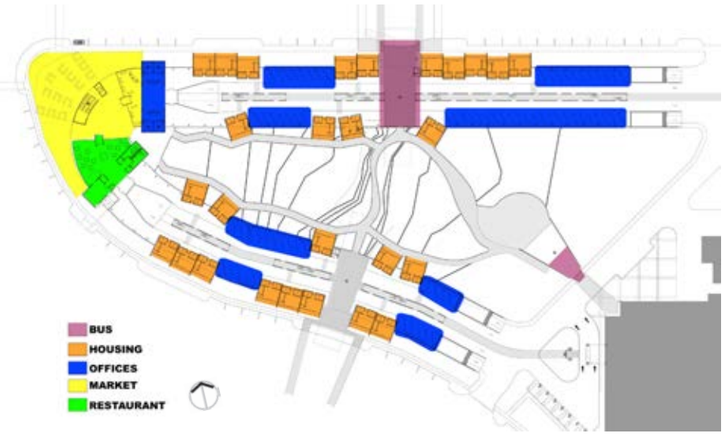
Initial Form Study



Final Form Study

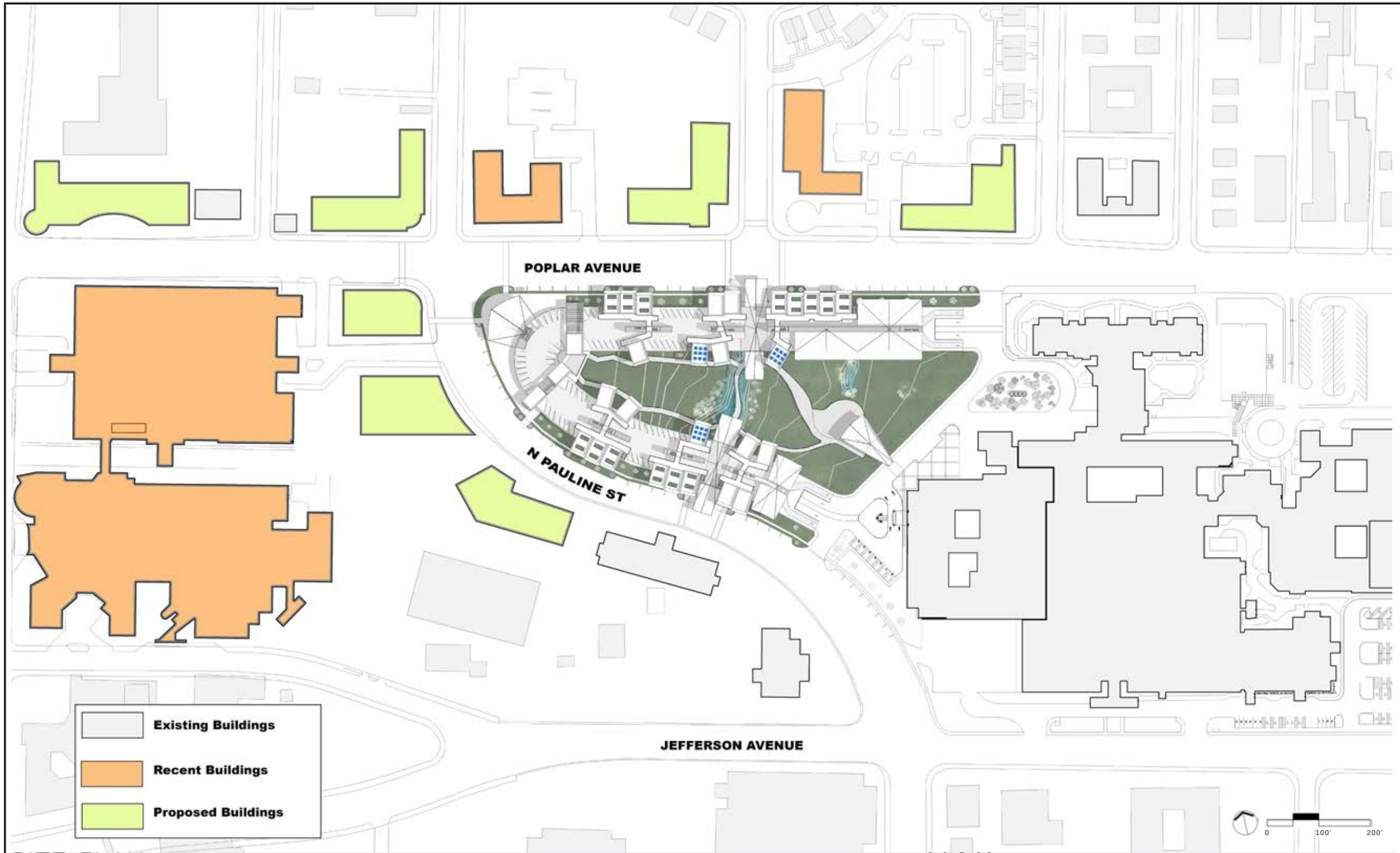
Southern Aerial View

First Floor Proposed Present Use



First Floor Proposed Post-car Use

PRESENT/FUTURE USE



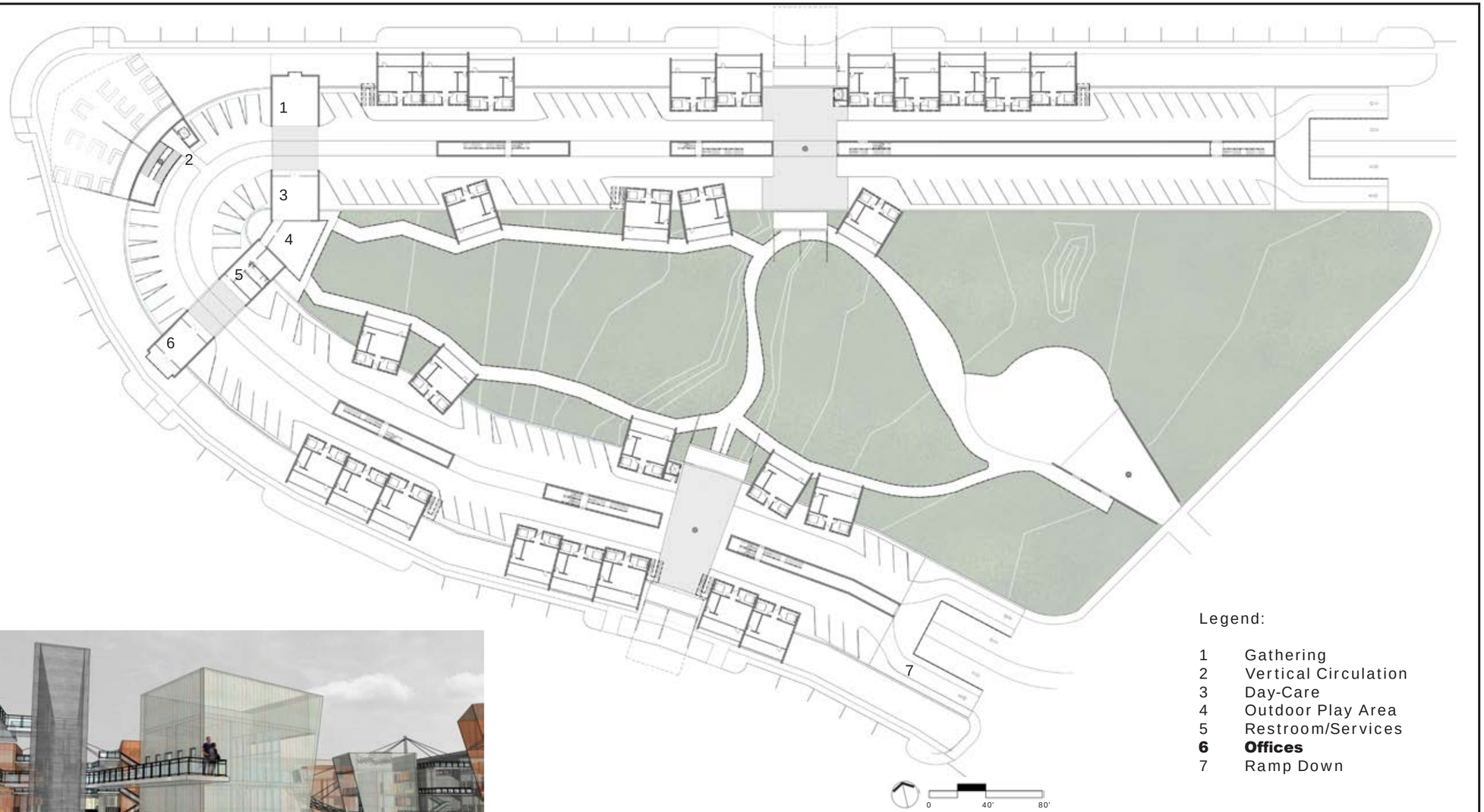
SITE PLAN

HAIL: *Human Auto Integrated Lifestyle*

Lower Level

LEVEL 01

HAIL: *Human Auto Integrated Lifestyle*



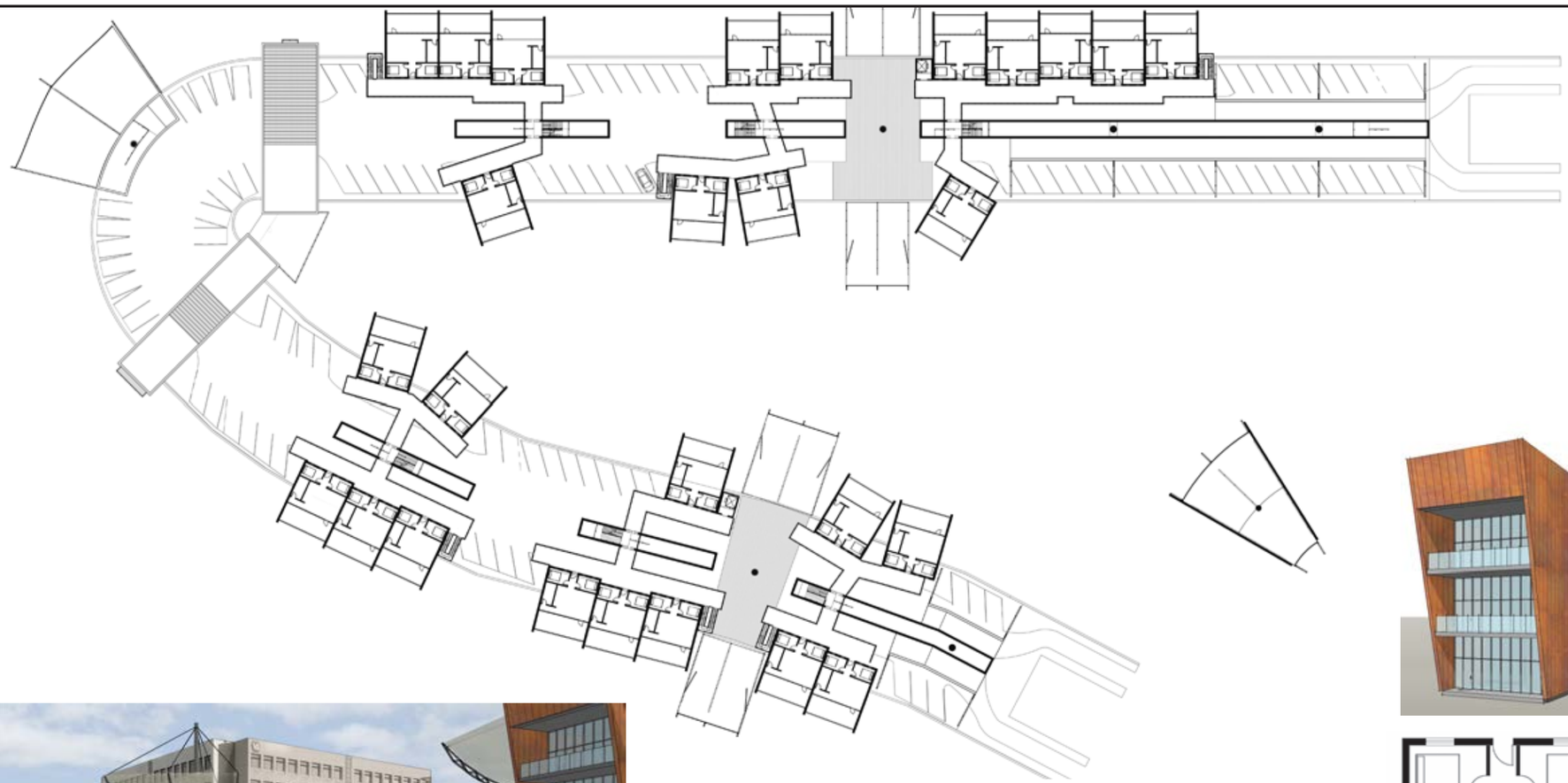
Legend:

1 Gathering
2 Vertical Circulation
3 Day-Care
4 Outdoor Play Area
5 Restroom/Services
6 Offices
7 Ramp Down

Street Connection

LEVEL 02

HAIL: *Human Auto Integrated Lifestyle*



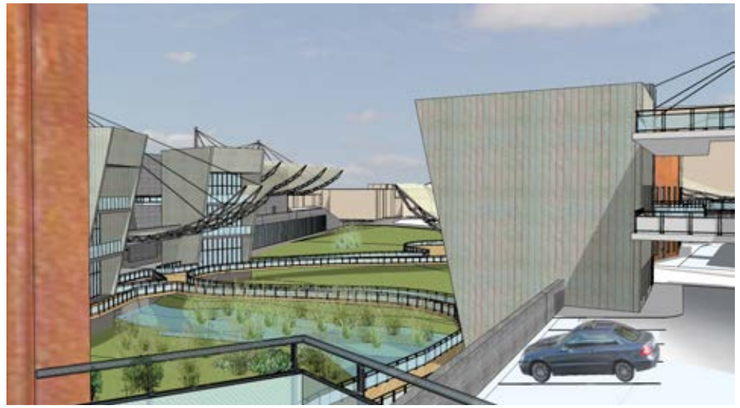
Typical Unit

0 10' 20'

View Towards Stage

LEVEL 03

HAIL: *Human Auto Integrated Lifestyle*



View From Connector

Bus Stop

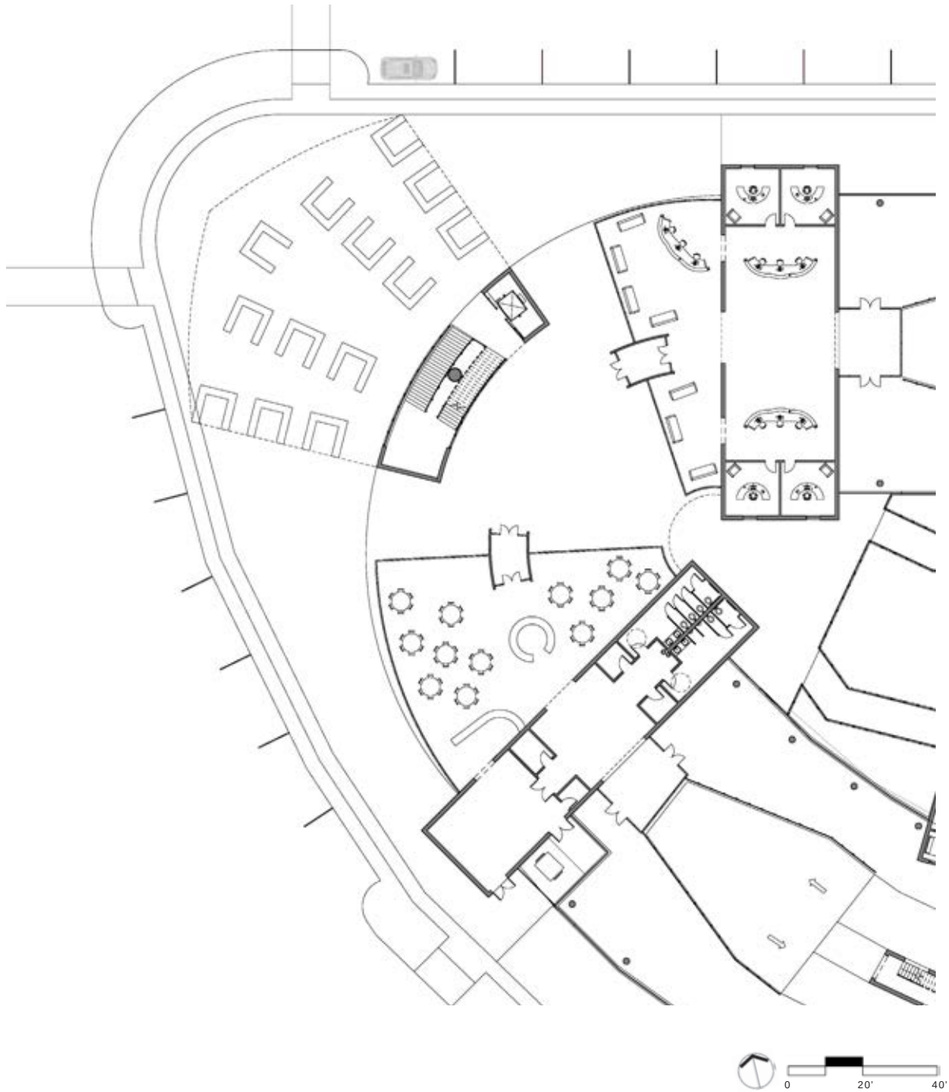
Pauline Street

Poplar Avenue

0 40' 80'

ELEVATIONS

HAIL: *Human Auto Integrated Lifestyle*

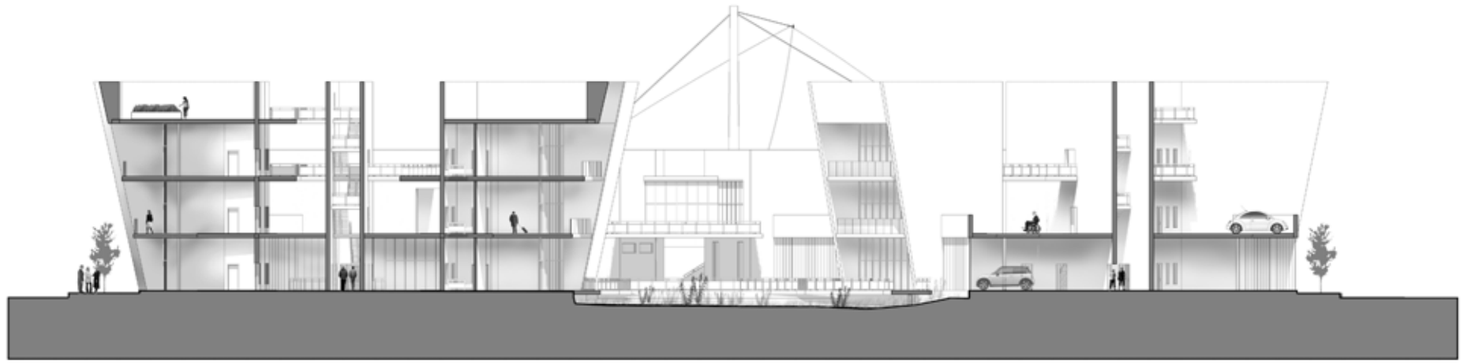


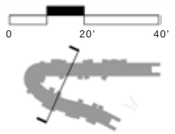
Western Approach

Plaza Approaching Courtyard

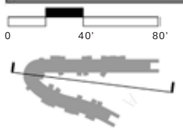
PLAZA

HAIL: *Human Auto Integrated Lifestyle*





Stage/MATA Plus Shelter



BUILDING SECTIONS

Article 8. Overlay Districts

8.1 OVERLAY DISTRICTS GENERALLY

A. Overlay Districts may be established from time to time as the Governing Bodies see fit in order to promote a more carefully tailored standard of development within a specified geographical area. The nature, applicability, standards, regulations, and restrictions of each Overlay District may vary as appropriate in order to achieve the stated purpose and goals of a particular Overlay District.

B. Where the standards of a particular Overlay District, established by this Article, do not address standards established elsewhere in this Code, the standards established elsewhere apply.

C. Where the standards of a particular Overlay District, established by this Article, conflict with the standards established elsewhere in this Code, the Overlay standards shall apply.

D. Changes to frontage maps or height maps that were adopted as part of an Overlay District and incorporated into the Zoning Map shall be processed pursuant to Chapter 9.4, Text Amendment.

8.2 MEDICAL OVERLAY DISTRICT (-MO)

8.2.1 Purpose

The purpose of the Medical Overlay District is to support the investment efforts of the various institutional uses located within the district by providing restrictions on those uses deemed incompatible with the future land uses anticipated in the area. The area is also intended to have a more urban, pedestrian-friendly, walkable character in the future, and therefore replacement standards that support this vision are included in the overlay district. Finally, mapped limitations on height will help reduce the impact of large-scale uses on the surrounding neighborhoods.

8.2.2 Applicability

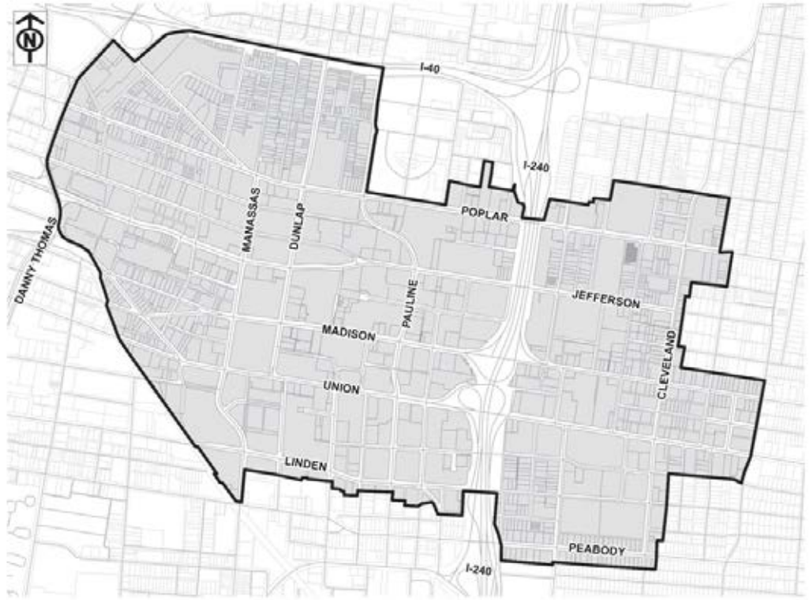
Within the Medical Overlay District, as designated below, the standards of this Chapter shall apply to:

A. All new building construction;

B. All building expansion with removal of more than 25% of existing walls facing a public street, or a street-facing elevation if the parcel is landlocked; or removal of more than 50% of all existing exterior walls.

C. All existing buildings that are not in conformance with the requirements of the underlying district or this overlay district at the time of adoption shall be governed by Article 10 (nonconformities).

D. No Planned Developments (Section 4.10) shall be allowed within the Medical Overlay District.



Medical Overlay District (-MO)

8.2.3 Site Plan Review

A. Authority

The Planning Director is authorized to approve site plans within the Medical Overlay District in accordance with Chapter 9.13.

B. Administrative Deviations

During the site plan review process, the Planning Director is authorized to approve administrative deviations (see Chapter 9.21) to the building envelope standards in Sub-Section 8.2.5C, where, owing to special conditions, strict enforcement of certain standards would be physically impractical.

C. Special Exceptions

1. Authority

The Land Use Control Board is authorized to approve special exceptions to certain requirements of this Chapter in accordance with Chapter 9.14.

2. Permitted Special Exception

The Land Use Control Board has the authority to approve special exceptions for the following standards:

a. Additional height on interior blocks on lots with designated Urban or Shopfront frontages (see Chapter 8.2.6).

b. Modifications to any parking requirements.

8.2.4 Uses

A. All uses permitted by right or by special use permit in the underlying zoning districts are permitted in the Medical Overlay District, with the exception of the following prohibited uses:

1. Agricultural Uses

a. Commercial fishing
b. Farm labor and management services
c. Fish hatcheries and preserves
d. Grain, fruit, field crop and vegetable cultivation and storage
e. Hunting, trapping and game propagation
f. Livestock, horse, dairy, poultry and egg products
g. Timber tracts, forest nursery, gathering of forest products

2. Commercial Uses

a. Adult entertainment.
b. Beverage container collection center
c. Beverage container recycling
d. Boat rental, sale, storage or repair
e. Campground, travel trailer park
f. Garage, commercial storage
g. Greenhouse or nursery, commercial
h. Lawn, tree or garden service
i. Lumberyard
j. Mobile home sales
k. Motor vehicle sales (allowed where located in a fully-enclosed building)
l. Sheet metal shop
m. Vehicle wash

3. Industrial Uses

a. Manufacture, storage and distribution of asbestos products; chemical, paints, fertilizers and abrasive products; explosives; fabricated metal products and machinery; lumber and wood products; petroleum, liquefied petroleum gas and coal products; petroleum and coal product refining; radioactive materials (except those used in medical testing, research or care); rubber and plastic products; stone, clay, glass and concrete products; transportation equipment
b. Animal and poultry slaughter, stockyards, rendering
c. Automobile dismantlers and recyclers
d. Contactor's storage (outdoor)
e. Drop yard (with or without preventative maintenance service)
f. Leather and leather products tanning and finishing
g. Metal, sand, stone, gravel, or clay mining or processing facility
h. Primary metal manufacturing
i. Primary metal distribution and storage
j. Pulp mills
k. Scrap metal processors
l. Secondary materials dealers
m. Tire recapping

4. Transportation and Public Facility Uses

a. Airline terminal, freight, service facility
b. Boat dock, storage, repair
c. Bus terminal or service facility

d. Garbage or refuse collection service
e. Refuse treatment, storage, disposal or recycling
f. Landfill
g. Railroad switching yard, terminal, piggyback yard
h. Taxicab dispatch station
i. Truck or motor freight terminal, service facility

B. The following uses, where permitted by right in the underlying district, shall require a special use permit within the Medical Overlay District.

1. Boarding house
2. Fraternity, sorority
3. Group shelter
4. Rooming house
5. Transitional home
6. Student dormitory
7. Recreational field
8. Motor vehicle parking lot
9. Motor vehicle service station
10. Nightclub
11. Retail sales or vending, outdoor
12. Tavern, cocktail lounge
13. Contactor's storage (indoor)
14. Warehouse, self-service or mini-storage

C. In addition, upper-story residential is permitted by right in the Medical Overlay District.

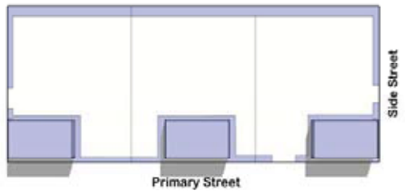
8.2.5 Building Envelope Standards

A. Applicability

SHOPFRONT FRONTAGE

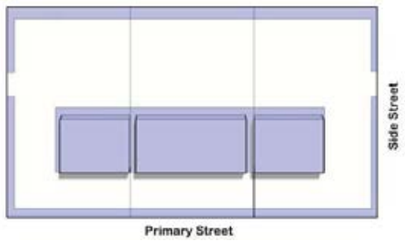
Buildings abut the street front and sidewalk – "Main Street" environment. There is no parking between the building and the street. Parking areas are located to the rear of buildings. Entrances are prominent and street facing. There often are two entrances, a pedestrian entrance and an ancillary automobile entrance.

URBAN FRONTAGE



Buildings abut the street front and sidewalk with greater spacing in between to balance the needs of both the pedestrian and automobile. There is no parking between the building and the street. Parking areas are located to the side and rear of buildings. Entrances are prominent and street facing. There often are two entrances, a pedestrian entrance and an ancillary automobile entrance.

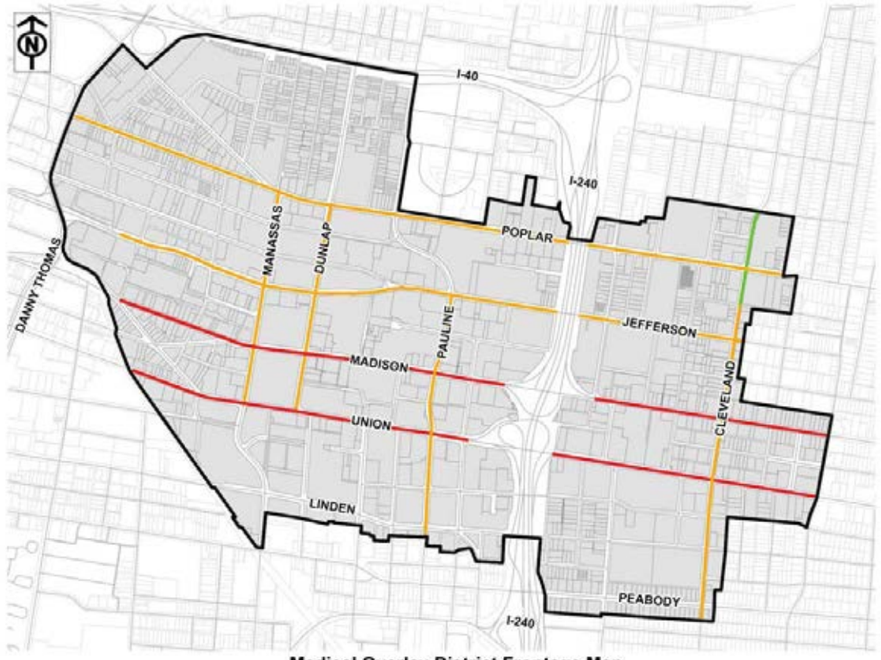
COMMERCIAL FRONTAGE



Buildings are set back further from the street to allow for easier access by automobile. Parking occurs in front of buildings but is limited two bays with a single drive aisle. There is usually a single entrance facing the primary street served by an internal sidewalk.

B. Frontage Map

The following map designates Shopfront, Urban, and Commercial Frontages within the Medical Overlay District.



Medical Overlay District Frontage Map

Shopfront Frontage — Urban Frontage — Commercial Frontage

C. Building Regulations

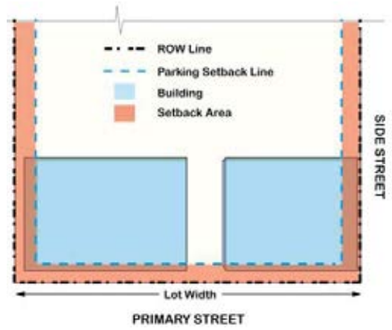
The building envelope standards in the following table shall replace and supplement the respective regulations of the underlying nonresidential districts. Where no frontage is designated on the Frontage Map as Shopfront, Urban or Commercial, the General standards shall apply. Setbacks are measured from the right-of-way.

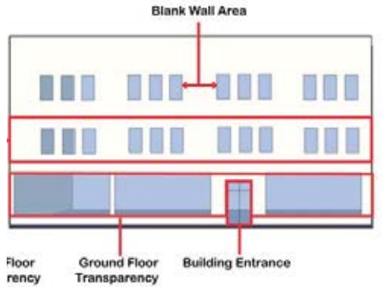
	Shopfront	Urban	Commercial	General
BUILDING & PARKING PLACEMENT				
Lot Area & Width				
Area (min sq. ft.)	--	--	--	--
Width (min ft.)	--	--	--	--
Setback Area				
Front setback (min ft.)	7	7	7	7
Front setback (max ft.)	15[1]	15[1]	75[1]	--
Required Building Frontage (min %)				
Primary street (lot up to100 feet in width)	70	--	--	--
Primary street (lot up to 125 feet in width)	--	50	50	--
Primary street (all other lots)	80	60	60	--
Side street	40	25	25	--
Side/Rear Setback (min ft.)				
Abutting single-family	10	10	10	10
Abutting multifamily, nonresidential	0 or 10[2]	0 or 10[2]	0 or 10[2]	0 or 10[2]
Abutting alley	5	5	5	5
Building separation	10	10	10	10
Parking Setback (min ft.)				
From primary street	8[3]	8[3]	8	8
From side street	8	8	8	8
Abutting single-family	10	10	10	10
Abutting multifamily, nonresidential, alley	0	0	0	0
ELEMENTS				
Transparency (min %)				
Primary street				
Ground floor	60	50	50	--
Upper floors	20	20	20	--
Side street				
Ground floor	30	30	30	--
Upper floors	20	20	20	--
Building Entrance				
Facing primary street	Required	Required	Required	Allowed
Blank Wall Area (max linear ft.)	30	30	30	--
HEIGHT				
Building Height (max ft.)	See 8.2.6	See 8.2.6	See 8.2.6	See 8.2.6
~~Ground Floor Elevation (min inches)~~				
~~Residential use~~	~~18~~	~~18~~	~~18~~	~~--~~
~~Nonresidential use~~	~~0~~	~~0~~	~~0~~	~~--~~
Floor Height (min/max ft.)				
Ground floor height	14/20	14/20	14/20	--
Upper floor height	9/12	9/12	9/12	--

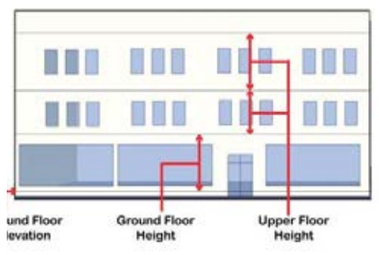
[1] Maximum setback for buildings in the Shopfront, Urban and Commercial frontages may be determined by averaging the setback distance over the width of the building, subject to an Administrative Deviation, Chapter 9.21.
[2] A 0-foot setback is permitted for attached buildings; however, a minimum setback of 10 feet is required between detached buildings.
[3] Parking on Shopfront and Urban frontages shall be located no closer to the primary street than the principal building.

IOPFRONT FRONTAGE

· related streetscape standards)







BUILDING & PARKING PLACEMENT

LOT AREA & WIDTH
No minimum
SETBACK AREA
7 ft. to 15 ft. behind ROW line.
REQUIRED BUILDING FRONTAGE
3. Primary street (lots 100 ft. or more in width). The building façade must be located within the setback area for a minimum of 80% of the lot width.
4. Primary street (lots less than 100 ft. in width). The building façade must be located within the setback area for a minimum of 70% of the lot width. For lots under 100 ft. in width, the required building frontage may be reduced to accommodate no more than a single 20-ft. access drive for a rear parking area.
5. Side street. The building façade must be located within the setback area for a minimum of 40% of the lot depth.

PARKING SETBACK
1. Primary street setback. Min 15 ft. behind ROW line.
2. Side street setback. Min 10 ft. behind ROW line.
3. Parking shall be located behind the parking setback line. No parking is permitted between the street and the building. This requirement shall not restrict on-street parking.

ELEMENTS

TRANSPARENCY (WINDOWS & DOORS)
1. Ground floor. Primary Street min 60%, Side Street min 30%, situated between 2 and 12 ft. above the adjacent sidewalk. Ground floor residential, office and industrial uses may provide translucent widows to meet all transparency requirements.
2. Upper floor. Min 20% situated from floor to floor.
3. Retail sales and service uses. A minimum of 60% of the window pane surface area shall allow views into the ground floor for a depth of at least 8 ft. Windows shall not be made opaque by window treatments (excepting operable sunscreen devices within the conditioned space).

BUILDING ENTRANCE
5. A functioning entrance, operable during normal business hours, is required facing the primary street. An angled entrance may be provided at either corner of the building along the primary street to meet this requirement.
6. A building located on two primary streets shall have either one entrance per frontage or provide one angled entrance at the corner of the building at the intersection. Buildings located on corner lots shall meet all applicable intersection sight distance requirements. Additional entrances off another street, pedestrian area, or internal parking area are permitted.
7. A minimum of 50% of the required entrance shall be transparent.
8. Recessed entrances shall not exceed 3 ft. in depth and one floor in height.

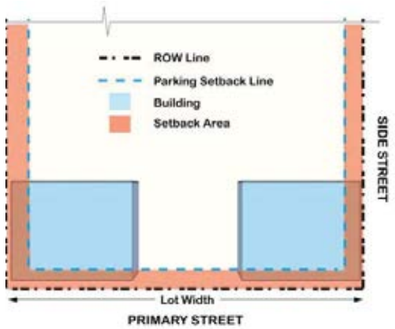
BLANK WALL AREA
Blank lengths of wall exceeding 30 linear ft. are prohibited on all building façades.

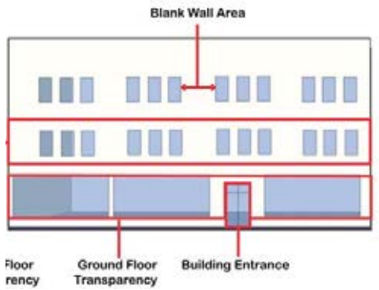
HEIGHT

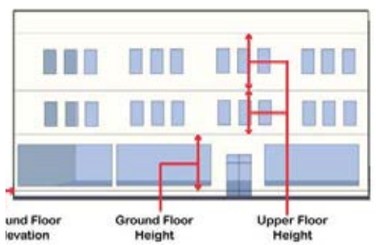
BUILDING HEIGHT
See 8.2.6 for maximum height requirements.
~~GROUND FLOOR ELEVATION~~
~~For ground floor residential uses, the ground floor finished elevation shall be a minimum of 18 inches above the adjacent sidewalk (measured from the front building façade to the top of the finished ground floor). There is no minimum for ground floor nonresidential uses.~~
FLOOR HEIGHT
1. The ground floor shall have at least 14 ft. of clear interior height (floor to ceiling) for a minimum depth of at least 25 ft.
2. The maximum floor-to-floor height for the ground floor is 20 ft.
3. The maximum floor-to-floor height for floors other than the ground floor is 12 ft.
4. At least 80% of each upper floor shall have an interior clear height (floor to ceiling) of at least 9 ft.

BAN FRONTAGE

· related streetscape standards)







BUILDING & PARKING PLACEMENT

LOT AREA & WIDTH
No minimum
SETBACK AREA
7 ft. to 15 ft. behind ROW line.
REQUIRED BUILDING FRONTAGE
1. Primary street (lots 125 ft. or more in width). The building façade must be located within the setback area for a minimum of 60% of the lot width.
2. Primary street (lots less than 125 ft. in width). The building façade must be located within the setback area for a minimum of 50% of the lot width.
3. Side street. The building façade must be located within the setback area for a minimum of 25% of the lot depth.

PARKING SETBACK LINE
4. Primary street setback. Min 15 ft. behind ROW line.
5. Side street setback. Min 10 ft. behind ROW line.
6. Parking shall be located behind the parking setback line. No parking is permitted between the street and the building. This requirement shall not restrict on-street parking.

ELEMENTS

TRANSPARENCY (WINDOWS & DOORS)
1. Ground floor. Primary Street min 60%, Side Street min 30%, situated between 2 and 12 ft. above the adjacent sidewalk. Ground floor residential, office and industrial uses may provide translucent widows to meet all transparency requirements.
2. Upper floor. Min 20% situated from floor to floor.
3. Retail sales and service uses. A minimum of 60% of the window pane surface area shall allow views into the ground floor for a depth of at least 15 ft. Windows shall not be made opaque by window treatments (excepting operable sunscreen devices within the conditioned space).

BUILDING ENTRANCE
4. A functioning entrance, operable during normal business hours, is required facing the primary street. An angled entrance may be provided at either corner of the building along the primary street to meet this requirement.
5. A building located on two primary streets shall have either one entrance per frontage or provide one angled entrance at the corner of the building at the intersection. Buildings located on corner lots shall meet all applicable intersection sight distance requirements. Additional entrances off another street, pedestrian area, or internal parking area are permitted.
6. A minimum of 50% of the required entrance shall be transparent.
7. Recessed entrances shall not exceed 3 ft. in depth and one floor in height.

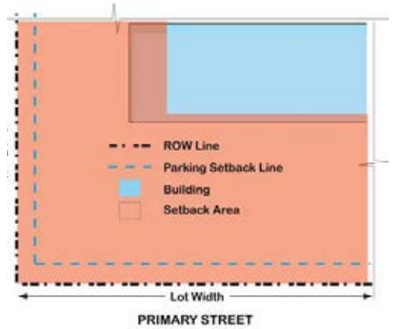
BLANK WALL AREA
Blank lengths of wall exceeding 30 linear ft. are prohibited on all building façades.

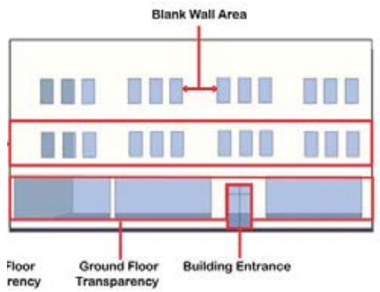
HEIGHT

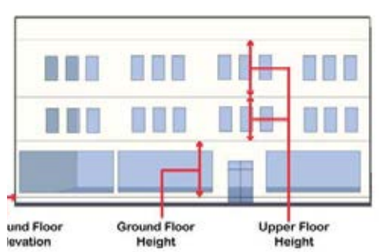
BUILDING HEIGHT
See 8.2.6 for maximum height requirements.
~~GROUND FLOOR ELEVATION~~
~~For ground floor residential uses, the ground floor finished elevation shall be a minimum of 18 inches above the adjacent sidewalk (measured from the front building façade to the top of the finished ground floor). There is no minimum for ground floor nonresidential uses.~~
FLOOR HEIGHT
1. The ground floor shall have at least 14 ft. of clear interior height (floor to ceiling) for a minimum depth of at least 25 ft.
2. The maximum floor-to-floor height for the ground floor is 20 ft.
3. The maximum floor-to-floor height for floors other than the ground floor is 12 ft.
4. At least 80% of each upper floor shall have an interior clear height (floor to ceiling) of at least 9 ft.

OMMERCIAL FRONTAGE

r related streetscape standards)







BUILDING & PARKING PLACEMENT

LOT AREA & WIDTH
No minimum
SETBACK AREA
7 ft. to 75 ft. behind ROW line.
REQUIRED BUILDING FRONTAGE
1. Primary street (lots 125 ft. or more in width). The building façade must be located within the setback area for a minimum of 60% of the lot width.
2. Primary street (lots less than 125 ft. in width). The building façade must be located within the setback area for a minimum of 50% of the lot width.
3. Side street. The building façade must be located within the setback area for a minimum of 25% of the lot depth.

PARKING SETBACK LINE
4. Primary/side street setback. Min 8 ft. behind ROW line.
5. Parking shall be located behind the parking setback line. A single 22-ft. drive aisle serving 20-ft. deep parking spaces on one or both sides may be located between the building and the street. Where parking is provided between the building and the street, the 8-ft. parking setback area shall be landscaped.

ELEMENTS

TRANSPARENCY (WINDOWS & DOORS)
1. Ground floor. Primary Street min 60%, Side Street min 30%, situated between 2 and 12 ft. above the adjacent sidewalk. Ground floor residential, office and industrial uses may provide translucent widows to meet all transparency requirements.
2. Upper floor. Min 20% situated from floor to floor.
3. Retail sales and service uses. A minimum of 60% of the window pane surface area shall allow views into the ground floor for a depth of at least 15 ft. Windows shall not be made opaque by window treatments (excepting operable sunscreen devices within the conditioned space).

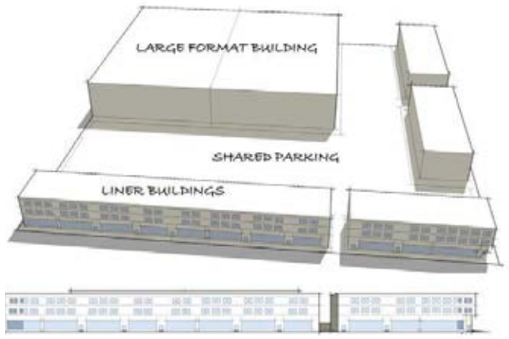
BUILDING ENTRANCE
1. A functioning entrance, operable during normal business hours, is required facing the primary street. An angled entrance may be provided at either corner of the building along the primary street to meet this requirement.
2. A building located on two primary streets shall have either one entrance per frontage or provide one angled entrance at the corner of the building at the intersection. Buildings located on corner lots shall meet all applicable intersection sight distance requirements. Additional entrances off another street, pedestrian area, or internal parking area are permitted.
3. A minimum of 50% of the required entrance shall be transparent.
4. Recessed entrances shall not exceed 3 ft. in depth and one floor in height.

BLANK WALL AREA
Blank lengths of wall exceeding 30 linear ft. are prohibited on all building façades.

HEIGHT

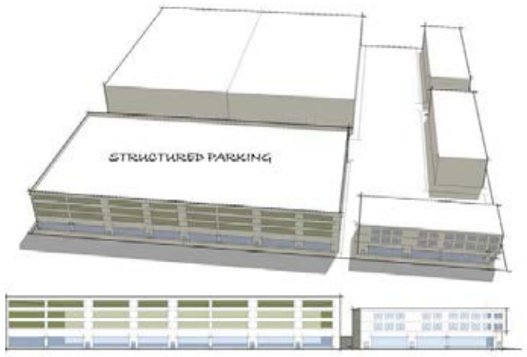
BUILDING HEIGHT
See 8.2.6 for maximum height requirements.
~~GROUND FLOOR ELEVATION~~
~~For ground floor residential uses, the ground floor finished elevation shall be a minimum of 18 inches above the adjacent sidewalk (measured from the front building façade to the top of the finished ground floor). There is no minimum for ground floor nonresidential uses.~~
FLOOR HEIGHT
1. The ground floor shall have at least 14 ft. of clear interior height (floor to ceiling) for a minimum depth of at least 25 ft.
2. The maximum floor-to-floor height for the ground floor is 20 ft.
3. The maximum floor-to-floor height for floors other than the ground floor is 12 ft.
4. At least 80% of each upper floor shall have an interior clear height (floor to ceiling) of at least 9 ft.

ARGE FORMAT BUILDINGS



Liner buildings facing a designated frontage may be used to screen large format buildings. Shared parking is allowed between the large format building and the street provided liner buildings are constructed to the meet the designated frontage standards. Large format buildings screened by liner buildings (that meet the designated frontage requirements) are only required to meet the ground floor area, side/rear setback, parking setback, and building height requirements.

TRUCTURED PARKING

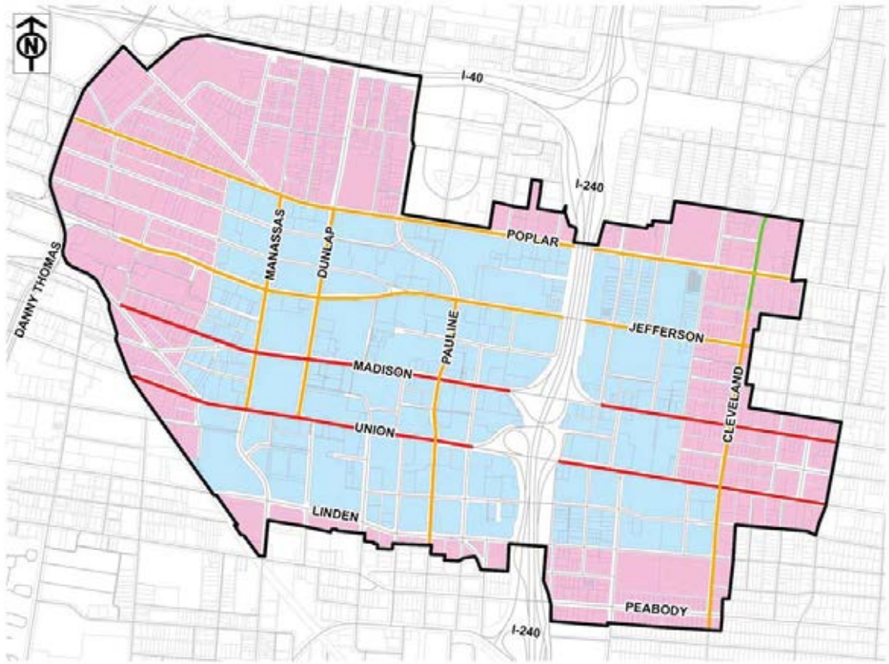


Structured parking is permitted fronting on any street provided that on a designated frontage all frontage requirements are met. Such buildings shall meet all applicable building envelope standards except for upper floor transparency requirements. Such building shall contain active ground floor uses along the designated frontage for minimum depth of least 25 feet.

8.2.6 Height Standards

A. Building Height Standards

The following map designates maximum building height limits within the Medical Overlay District.



Medical Overlay District Height Map

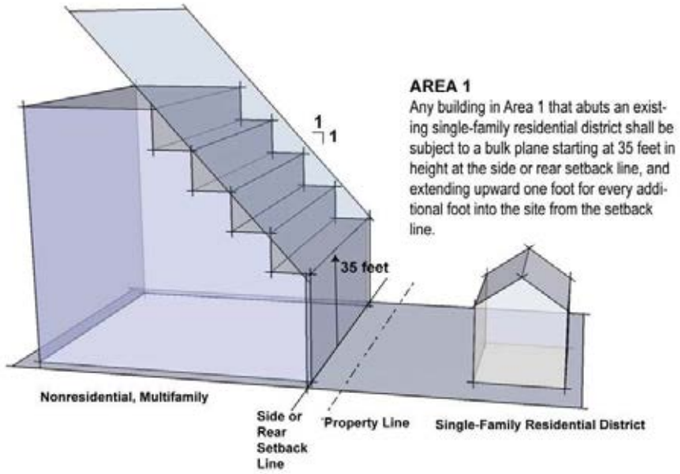
Shopfront Frontage — Urban Frontage — Commercial Frontage

Area 1 Area 2

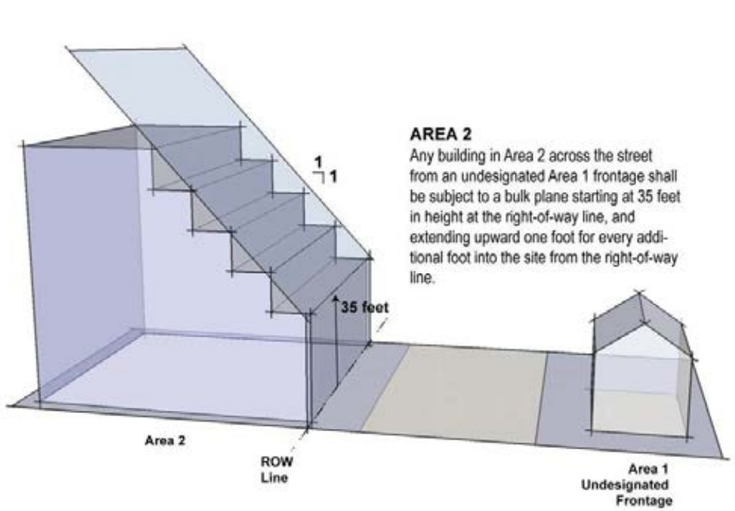
	Max Height
Area 1	
General (no frontage designation)	35 feet
Commercial/Urban/Shopfront Frontage	60 feet *
Area 2	
General (no frontage designation)	80 feet *
Commercial Frontage	80 feet
Urban/ Shopfront Frontage (anywhere on lot)	
Block face (0 - 30 feet of lot depth)	80 feet
Block interior (30+ feet of lot depth)	128 feet
Additional height permitted for block interiors by special exception	

* subject to bulk plane (see Paragraph B below)

B. Bulk Plane



AREA 1
Any building in Area 1 that abuts an existing single-family residential district shall be subject to a bulk plane starting at 35 feet in height at the side or rear setback line, and extending upward one foot for every additional foot into the site from the setback line.

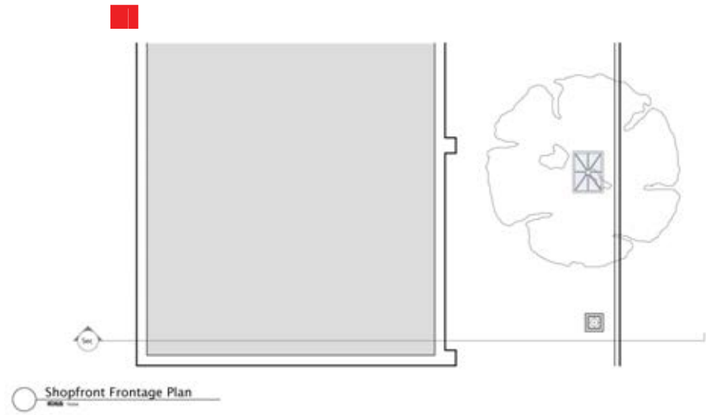


AREA 2
Any building in Area 2 across the street from an undesignated Area 1 frontage shall be subject to a bulk plane starting at 35 feet in height at the right-of-way line, and extending upward one foot for every additional foot into the site from the right-of-way line.

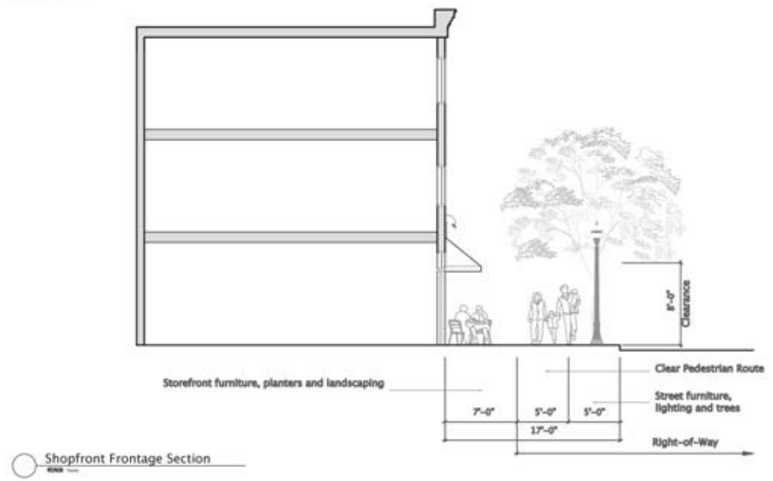
8.2.7 Streetscape Standards

A. Shopfront Frontage

The following minimum streetscape standards apply along a Shopfront Frontage as designated in Sub-Section 8.2.5B (see Sub-Section 8.2.5C for related building envelope standards).



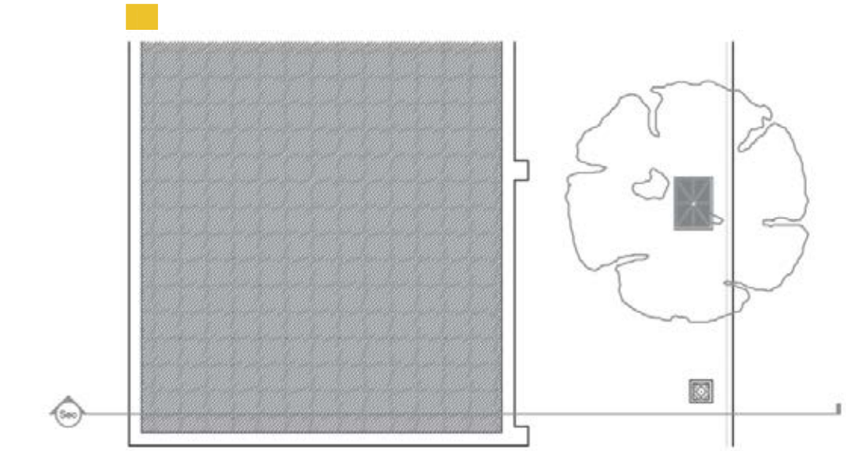
Shopfront Frontage Plan



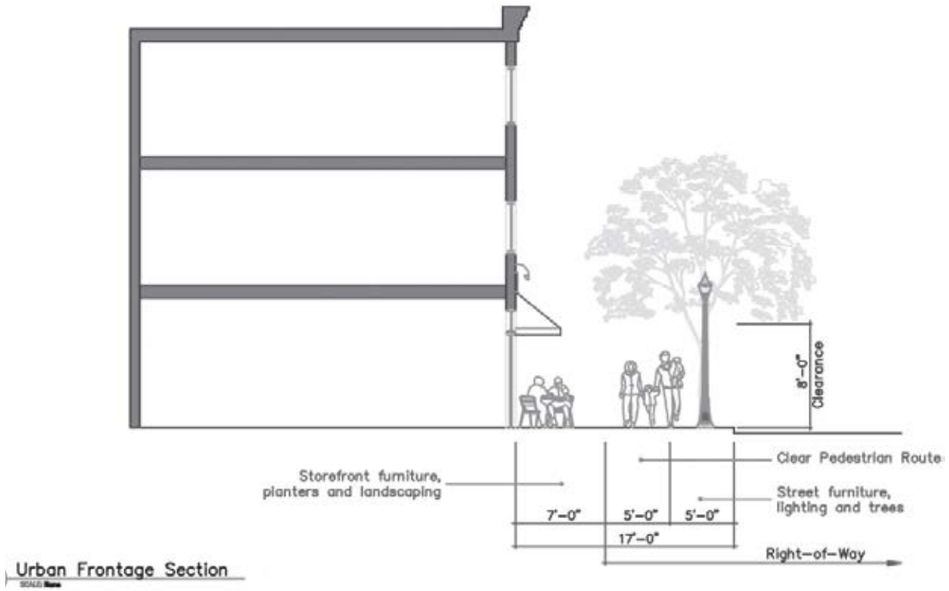
Shopfront Frontage Section

B. **Urban Frontage**

The following minimum streetscape standards apply along an Urban Frontage as designated in Sub-Section 8.2.5B (see Sub-Section 8.2.5C for related building envelope standards).



Urban Frontage Plan

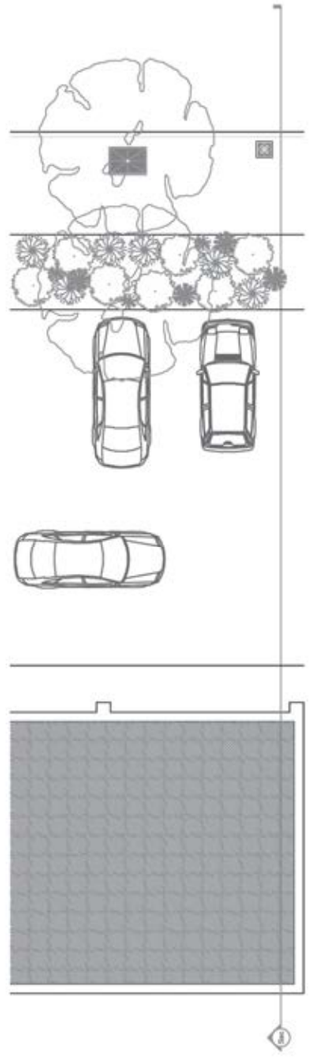


Urban Frontage Section

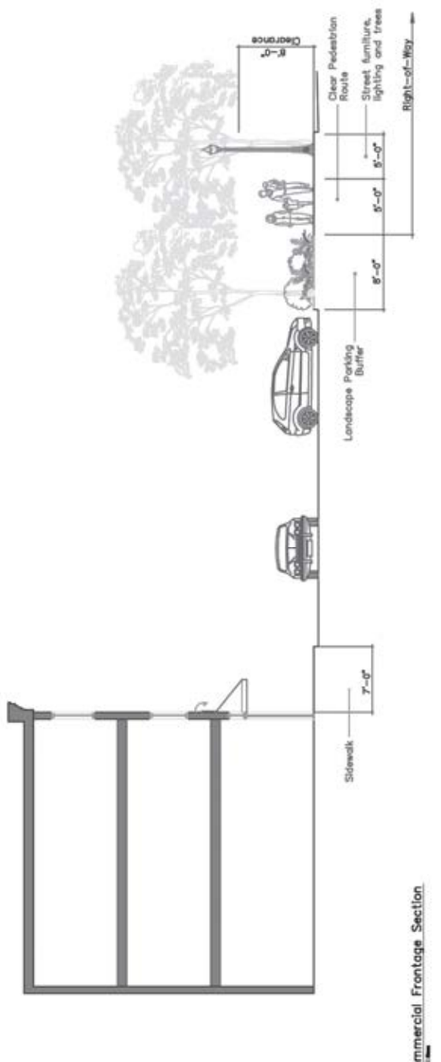
C. **Commercial Frontage**

The following minimum streetscape standards apply along a Commercial Frontage as designated in Sub-Section 8.2.5B (see Sub-Section 8.2.5C for related building envelope standards). Developments with no on-site parking between the building street may follow the requirements for Urban Frontage (see B).

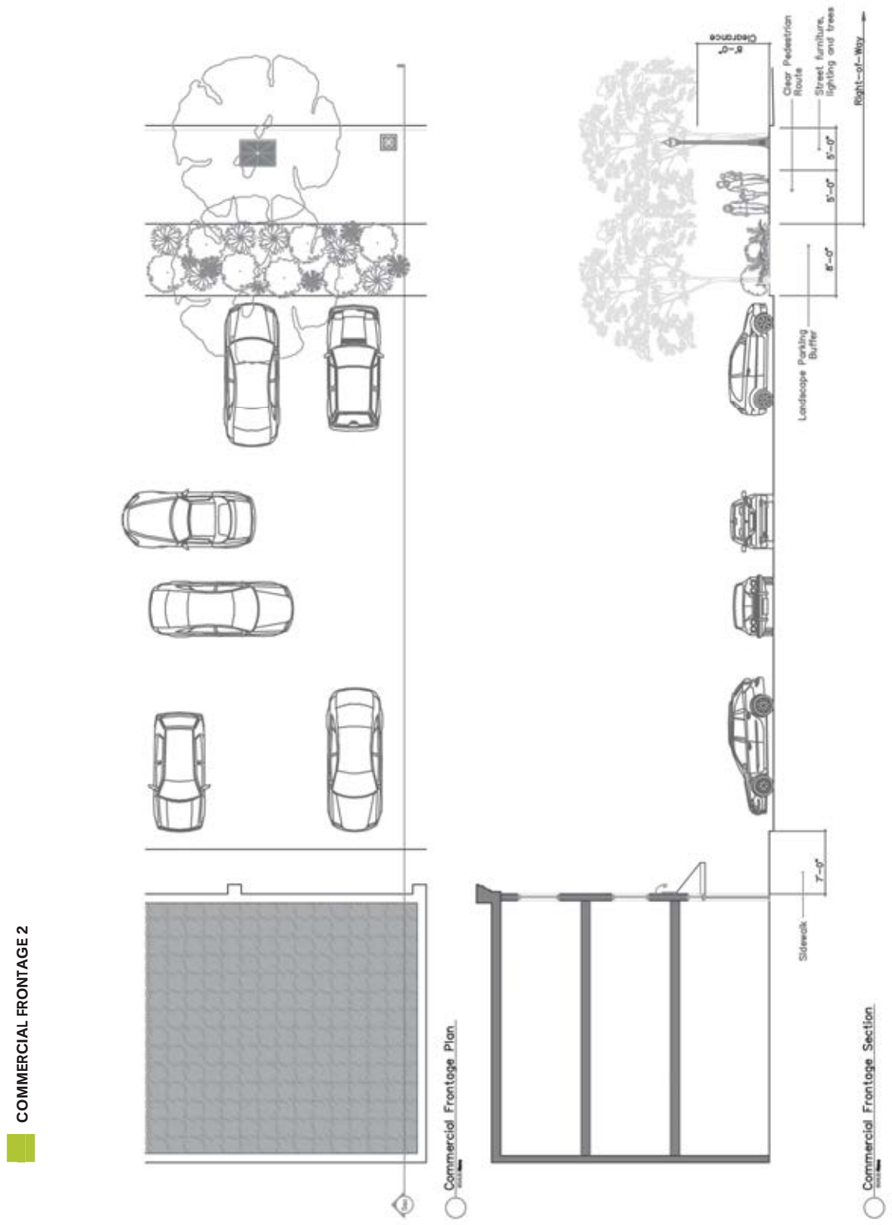
COMMERCIAL FRONTAGE 1



Commercial Frontage Plan



Commercial Frontage Section



D. **Street Trees**

A project developed in the Medical District Overlay shall provide street trees located at least every 40 feet on center. The street trees shall be planted in grates that are Americans with Disabilities Act (ADA) compliant or in planters with curbed beds. The location of street trees shall conform to the applicable streetscape plate.

8.2.8 Site Development Standards

A. Applicability

The following supplemental site development standards apply in all nonresidential districts within the Medical Overlay District.

B. Landscaping and Screening

1. Any building, structure, or use is subject to the landscaping requirements of Chapter 4.6, Landscaping and Screening.).
2. Trash collection, trash compaction, recycling collection and other similar service areas shall be located on the side or rear of the building and shall be screened from view from residentially-zoned property or public rights-of-way. Screening enclosures shall be fully enclosed by opaque walls or fences at least eight feet high with self-closing access doors and shall be constructed of the same materials as the primary building or buildings.
3. Trash collection, trash compaction, recycling collection and other similar service areas shall be located a minimum of 50 feet away from any residentially-zoned property line.
4. No garage doors, bay doors or loading areas shall face a Shopfront or Urban Frontage.
5. Loading areas shall be subject to the following screening requirements:
   a. Provide a minimum 100 percent year-round screen of all loading areas visible from residentially-zoned property or public right-of-way.
   b. This screen shall consist of berms, walls, fences, plant material or combination totaling eight feet in height at installation or completion of construction. Wall or fence materials shall be compatible with the primary structure.
   c. Loading docks shall be located to the side or rear of buildings when within 50 feet of any residentially-zoned property, unless the loading area is wholly within a closed building.
6. All roof, ground and wall mounted mechanical equipment (e.g. air handling equipment, compressors, duct work, transformers and elevator equipment) shall be screened from view from residential properties or public rights-of-way at ground level of the property line.
7. Roof-mounted mechanical equipment shall be shielded from view on all sides. Screening shall consist of materials consistent with the primary building materials, and may include metal screening or louvers which are painted to blend with the primary structure.
8. Wall or ground-mounted equipment screening shall be constructed of planting screens; brick, stone, reinforced concrete, or other similar masonry materials; or other similar materials.
9. Above-ground utilities and appurtenances to underground utilities which require above-ground installation shall be screened by a continuous planting of shrubs, with a minimum mature height equal to that of the utility structure. Required access ways to these utilities are exempt from the screening provisions.

C. Fences and Walls

1. Fences and walls shall be constructed of high quality materials, such as decorative blocks, brick, stone and wrought iron.
2. Chain-link fences, barbed wire or concertina wire shall not be permitted.
3. Breaks in the fence or wall may be provided for pedestrian connections to adjacent developments.
4. The maximum length of a continuous, unbroken and uninterrupted fence or wall plane shall be 100 feet. Breaks shall be provided through the use of columns, landscaped areas, transparent sections and a change in material.
5. Fences shall not be constructed in the sight triangle.

D. Drive-Thru Facilities

1. A drive-thru window shall only be permitted where it is not facing the public right-of-way of a Shopfront or Urban Frontage.
2. Drive-thru windows and lanes placed between the right-of-way and the associated building shall require landscape plantings installed and maintained along the entire length of the drive-thru lane, located between the drive-thru lane and the adjacent right-of-way. Such screening shall be a compact evergreen hedge or other type of dense foliage. At the time of installation, such screening shall be at least 36 inches in height and shall reach a height of 48 inches within two years of planting.
3. No drive-thru window shall be permitted on the side of a building adjacent to any residentially-zoned property.

E. Parking

1. Due to the high availability of public transportation in the Medical Overlay District area, any building, structure, or use may reduce the total number of required parking spaces specified in Chapter 4.5, Parking and Loading by up to 25 percent. Where off-street parking is provided, it shall comply with the geometric requirements of Chapter 4.5. Where parking spaces beyond the required parking spaces set forth in Chapter 4.5 are provided in surface parking lots, such additional spaces shall be established using pervious materials such as turf block, grasscrete or similar surfaces as approved by the City Engineer.
2. Surface parking lots are not allowed unless as accessory to a principal use permitted by both the underlying district and this overlay district, or as approved by special exception.
3. Any building, structure, or use must meet the loading requirements of Section 4.5.7.
4. The Land Use Control Board may approve modifications to any parking requirements in accordance with the special exception process.

F. Signs

The sign regulations in all residential zoning districts shall meet the district standards. Sign regulations in all nonresidential underlying zoning districts shall meet the standards of the sign regulations set out in Chapter 12-36 of the City of Memphis Code of Ordinances.

8.2.9 Definitions

For the purposes of this Chapter, the following words and terms shall have the following meanings:

A. Blank Wall Area. For the purposes of this chapter, blank wall area shall mean a portion of the exterior façade of the building which does not include a substantial material change (paint color is not considered a substantial change); windows or doors; or columns, pilasters or other articulation greater than 12 inches in depth.
B. Commercial Frontage. See Section 8.2.5.
C. Shopfront Frontage. See Section 8.2.5.
D. Transparent. Material through which light can travel with minimal scattering so that objects can be viewed clearly through it.
E. Translucent. Material through which light passes, but in such a way that a clear image cannot be formed of the object viewed through it.
F. Upper-Story Residential. A residential unit on the upper floors of a permitted nonresidential use.
G. Urban Frontage. See Section 8.2.5.

8.2.10 Conflict with the Uptown Special Purpose District

The regulations found in this Section that conflict with the regulations of Chapter 7.3, the Uptown Special Purpose District, shall apply to parcels that are included in both the Uptown Special Purpose District and the Medical Overlay District.

Article 8. Overlay Districts

8.1 OVERLAY DISTRICTS GENERALLY

A. Overlay Districts may be established from time to time as the Governing Bodies see fit in order to promote a more carefully tailored standard of development within a specified geographical area. The nature, applicability, standards, regulations, and restrictions of each Overlay District may vary as appropriate in order to achieve the stated purpose and goals of a particular Overlay District.
B. Where the standards of a particular Overlay District, established by this Article, do not address standards established elsewhere in this Code, the standards established elsewhere apply.
C. Where the standards of a particular Overlay District, established by this Article, conflict with the standards established elsewhere in this Code, the Overlay standards shall apply.
D. Changes to frontage maps or height maps that were adopted as part of an Overlay District and incorporated into the Zoning Map shall be processed pursuant to Chapter 9.4, Text Amendment.

8.2 MEDICAL OVERLAY DISTRICT (-MO)

8.2.1 Purpose

The purpose of the Medical Overlay District is to support the investment efforts of the various institutional uses located within the district by providing restrictions on those uses deemed incompatible with the future land uses anticipated in the area. The area is also intended to have a more urban, pedestrian-friendly, walkable character in the future, and therefore replacement standards that support this vision are included in the overlay district. Finally, mapped limitations on height will help reduce the impact of large-scale uses on the surrounding neighborhoods.

8.2.2 Applicability

Within the Medical Overlay District, as designated below, the standards of this Chapter shall apply to:

A. All new building construction;
B. All building expansion with removal of more than 25% of existing walls facing a public street, or a street-facing elevation if the parcel is landlocked; or removal of more than 50% of all existing exterior walls.
C. All existing buildings that are not in conformance with the requirements of the underlying district or this overlay district at the time of adoption shall be governed by Article 10 (nonconformities).
D. No Planned Developments (Section 4.10) shall be allowed within the Medical Overlay District.